User Manual

3-AXIS INDOOR DOME IP CAMERA

WARINGS

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS.

CAUTION

<table>
<tr><td> </td><td>CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN</td><td> </td></tr>
<tr><td colspan="3">CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</td></tr>
</table>

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I. Preface

This IP Camera is a Full HD 3-Axis Dome IP camera with the web server built in. User can view real-time video via IE browser. IP Camera supports simultaneously H.264, Motion JPEG & MPEG4 video compression and dual streaming which provides smooth and high video quality. The video can be stored in the SD card and played back remotely. With user friendly interface, it is an easy-to-use IP camera which is designed for security application.

II. Product Specifications

Main Features:

- Full HD 1080P Real time
- 3D+2D Digital Noise Reduction
- Digital Wide Dynamic Range
- Day&Night Switch time control manually
- IR Distance 15 Meter
- Power over Ethernet available
- Video output
- H.264/ M-JPEG / MPEG4 compression
- SD card backup
- Support iPhone/Android/Mac
- SDK for Software Integration

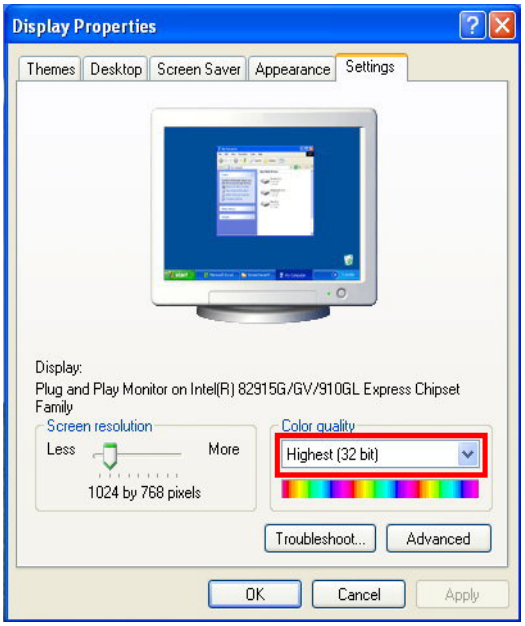
For the detail specification , please refer to the data sheet

III. Product Installation

A. Monitor Setting

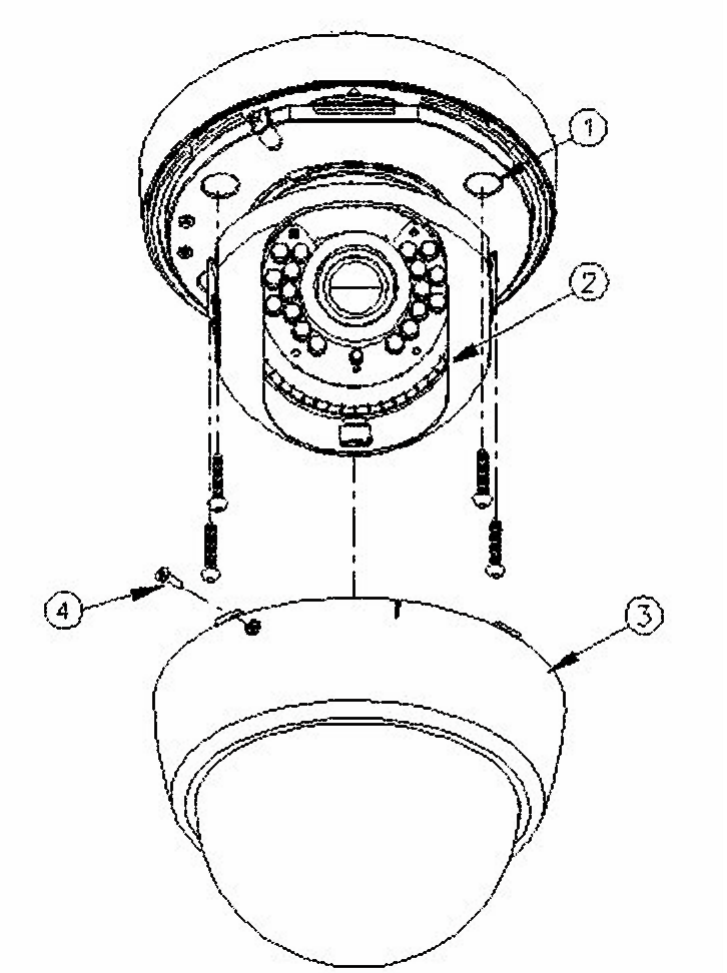
1. Right-Click on the desktop. Select “ Properties”

2. Change color quality to highest (32bit).



B. Hardware Installation

1. Dome Installation Steps



a. Use screws to lock the bottom of camera to the ceiling or the wall.

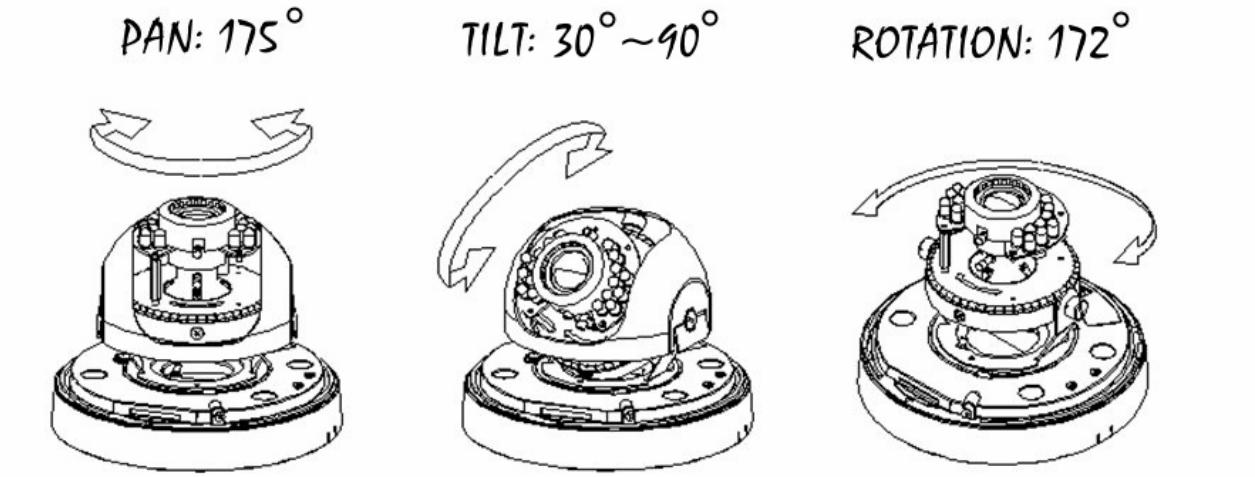
b. Use 3-Axis to adjust the lens angle.

c. Close the dome cover.

d. Tighten the screw on the cover to fix it.

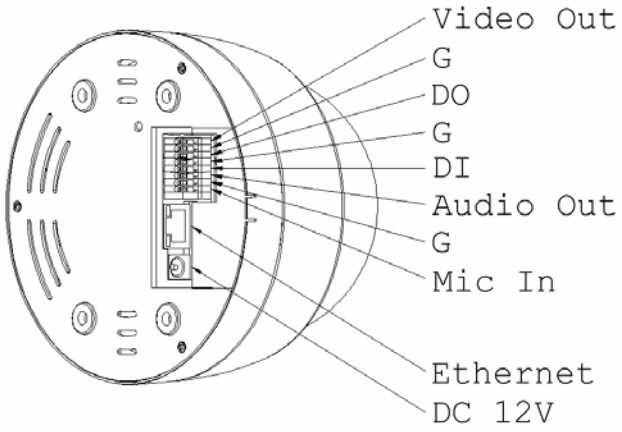
2. 3-Axis Diagram

Use the 3-Axis bracket to adjust the camera to appropriate angle.



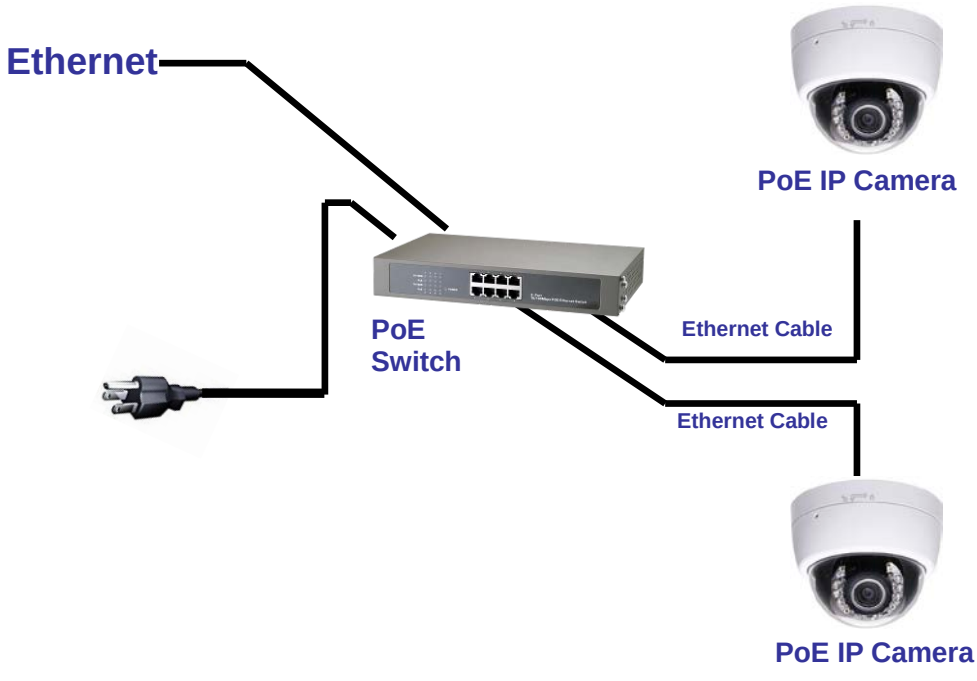
3. Connector Instruction

The Cable and connector are as below. Connect power adaptor first, then connect the IP Camera to PC or network, and set up the network configurations according to the network environment. About I/O setting, please refer to chapter VII in User Manual: "I/OConfiguration" for detail.



4. PoE (Power Over Ethernet)(Optional) 802.3at, 30.0W PoE Switch is recommended

Power over Ethernet (PoE) is a technology that integrates power into a standard LAN infrastructure. It enables power to be provided to the network device, such as an IP phone or a network camera, using the same cable as that used for network connection. It eliminates the need for power outlets at the camera locations and enables easier application of uninterruptible power supplies (UPS) to ensure 24 hours a day, 7 days a week operation.

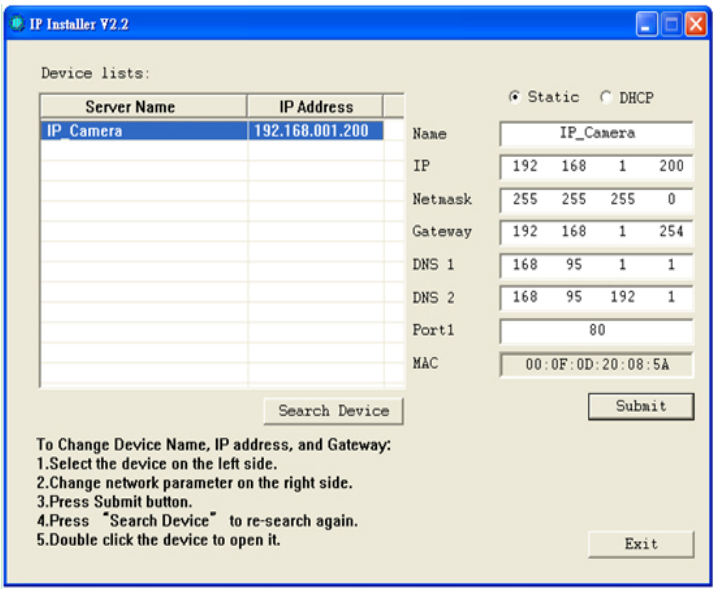


C. IP Assignment

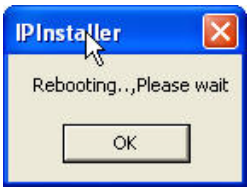
1. You can use the software“IP Installer” to assign the IP address of IP Camera. The software is in the attached CD.
2. There are two language versions of IP installer. Choose one as your need:
   IPInstallerCht.exe: Chinese version
   IPInstallerEng.exe: English version
3. There are 3 kinds of IP configuration.
   a. Fixed IP (Public IP or Virtual IP)
   b. DHCP (Dynamic IP)
   c. Dial-up (PPPoE)
4. Execute IP Installer
5. For Windows XP SP2 user, the following message box may pop up. Please click “Unblock”.

Windows Security Alert
To help protect your computer, Windows Firewall has blocked some features of this program.
Do you want to keep blocking this program?
Name: IPInstaller V2.1 Network Device Scan
Publisher: Unknown
Keep Blocking
Unblock
Ask Me Later
Windows Firewall has blocked this program from accepting connections from the Internet or a network. If you recognize the program or trust the publisher, you can unblock it. When should I unblock a program?

6. IP Installer configuration:



7. IP Installer will search for all IP Cameras connected on Lan. Click “Search Device” to refresh the result list.
8. Click one of the IP Camera listed on the left side. The network configuration of this IP camera shows on the right side. You may change the “name” of the IP Camera as your preference (eg: Office, warehouse). Change the parameter and click “Submit” . It will apply the change and reboot the Device.



9. Please make sure that the IP address of your PC and IP Camera are on the same subnet.

The same Subnet:

IP CAM IP address: 192.168.1.200

PC IP address: 192.168.1.100

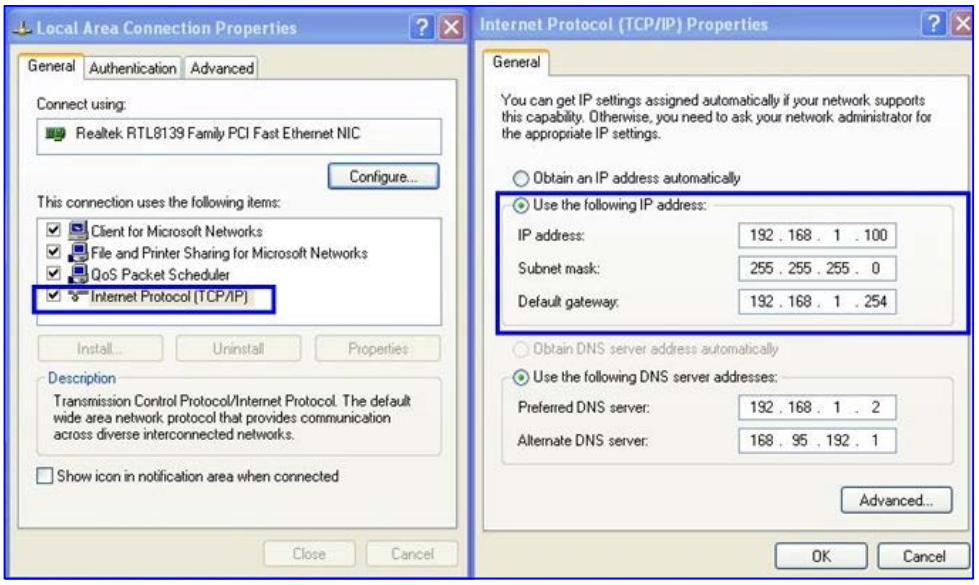
Different Subnets:

IP CAM IP address: 192.168.2.200

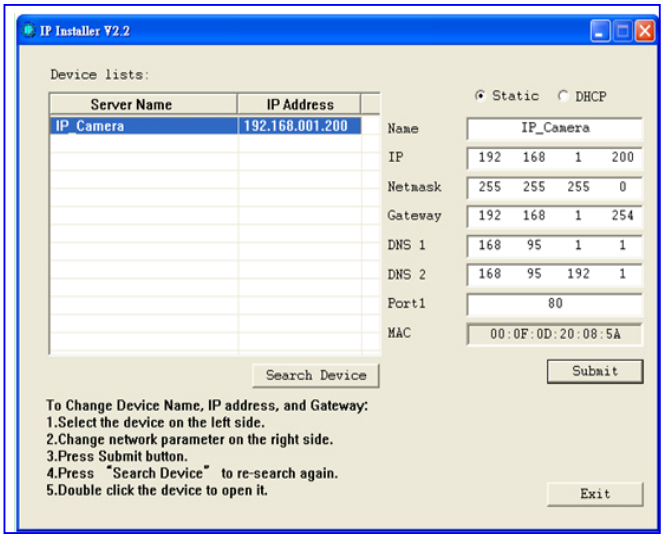
PC IP address: 192.168.1.100

To Change PC IP address:

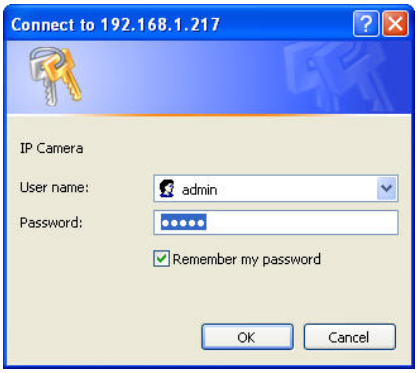
Control Panel→Network Connections→ Local Area Connection Properties→ Internet Protocol (TCP/IP) → Properties


Local Area Connection Properties
General
Authentication
Advanced
Connect using:
Realtek RTL8139 Family PCI Fast Ethernet NIC
Configure...
This connection uses the following items:
Client for Microsoft Networks
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Internet Protocol (TCP/IP)
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
Close
Cancel
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 1 . 100
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 1 . 254
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 192 . 168 . 1 . 2
Alternate DNS server: 168 . 95 . 192 . 1
Advanced...
OK
Cancel

10. A quick way to access remote monitoring is to double-click the selected IP Camera listed on “Device list” of IP Installer. An IE browser will be opened.



11. If you link to the IP Camera successfully, there pops a box asking you to log in. Please key in the default user name"admin" and password"admin" when you link to the IP Camera for the first time. You can revise the user name and password later. Please refer to Chapter V: "A.2. UserManagement".

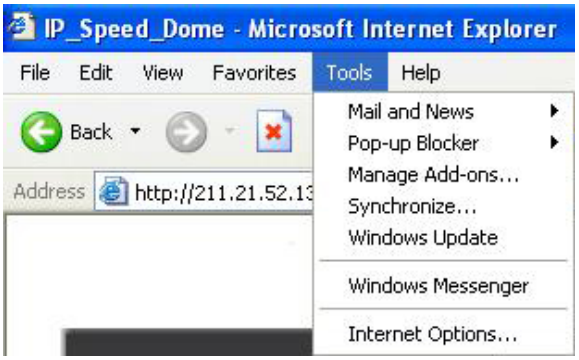
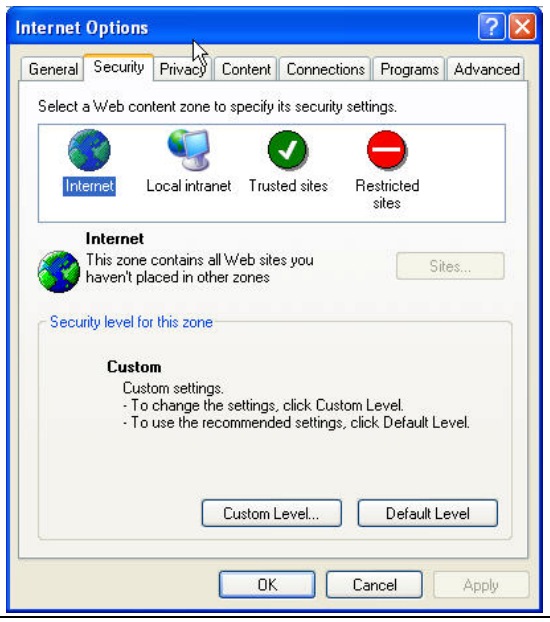
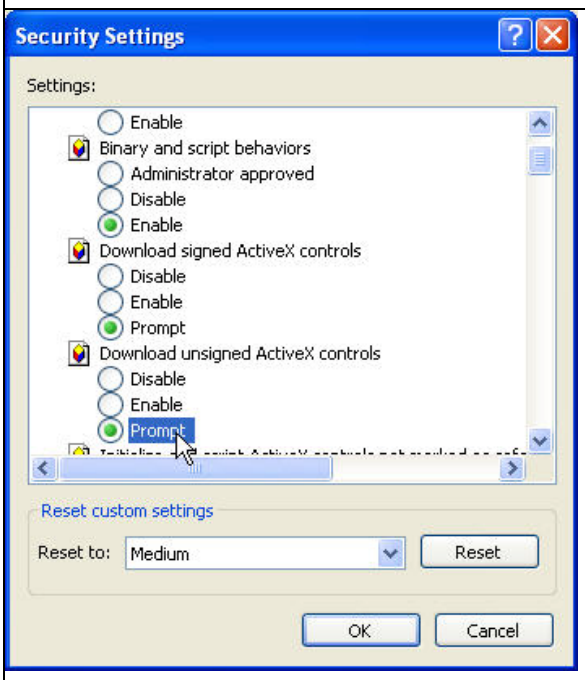
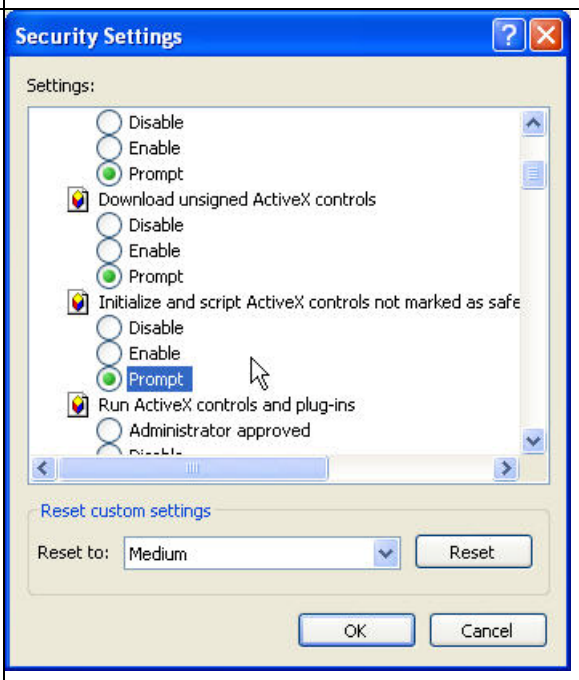


D. Install ActiveX control

For the first time to view the camera video via IE, it will ask you to install the ActiveX component.

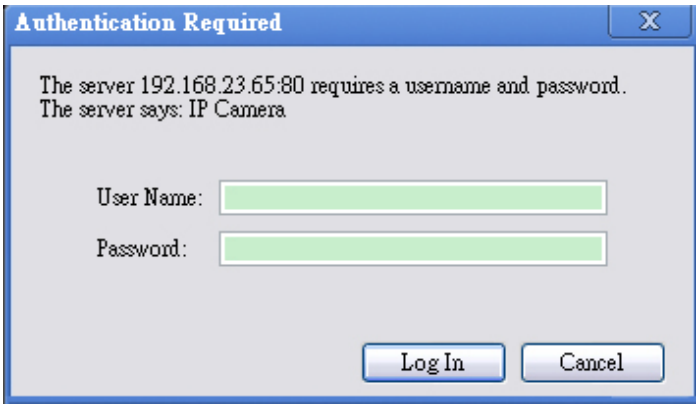
If the installation failed, please check the security setting for the IE browser.

1. IE→Tools → Internet Options… → Security Tab → Custom Level… → Security Settings → Download unsigned ActiveX controls→ Select “Enable” or Prompt.
2. IE → Tools → Internet Options… → Security Tab → Custom Level… →Initialize and script ActiveX controls not marked as safe → Select “Enable” or Prompt.

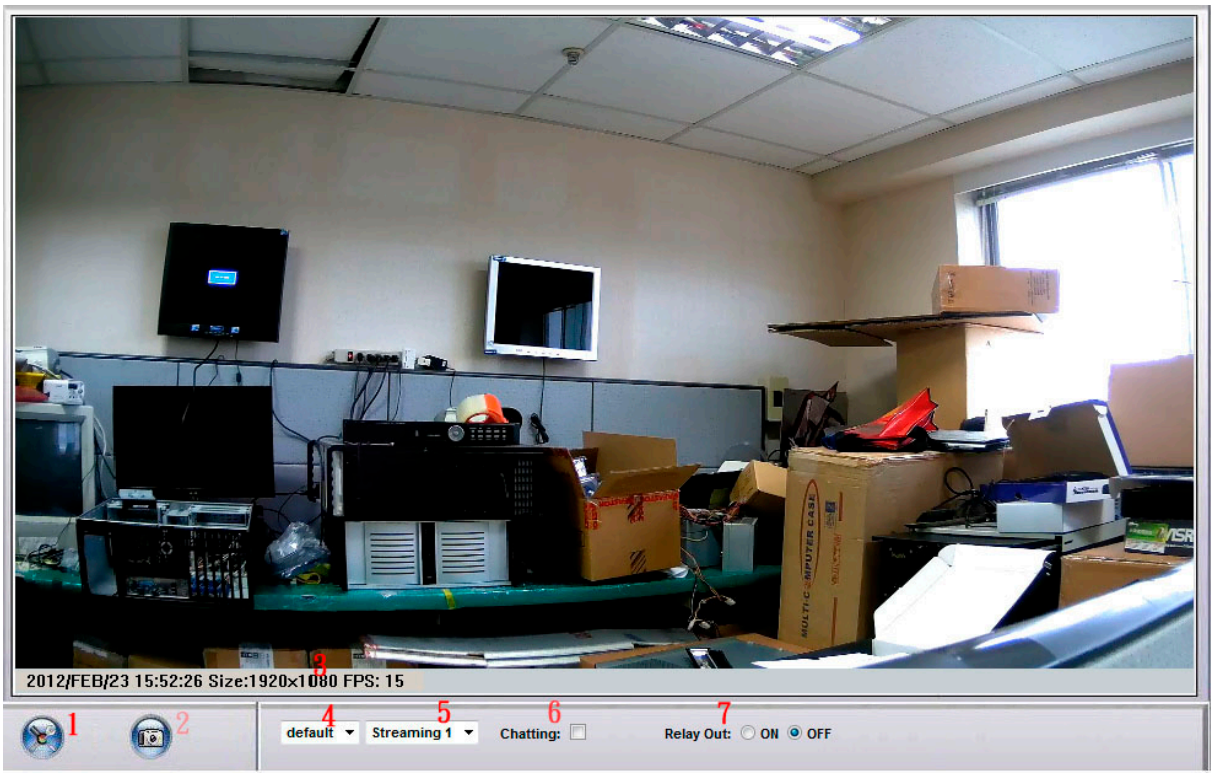
1	2
	
3	**4**
	
5	
When popup the following dialogue box, click “Yes”.	

IV. Live Video

Start an IE browser, type the IP address of the IP camera in the address field. It will show the following dialogue box. Key-in the user name and password. The default user name and password are “admin” and “admin”.



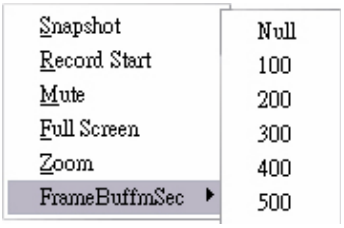
When the IP Camera is connected successfully, it shows the following program interface.



Double-click the video to switch to full screen view. Press “Esc” or double-click the video again back to normal mode.

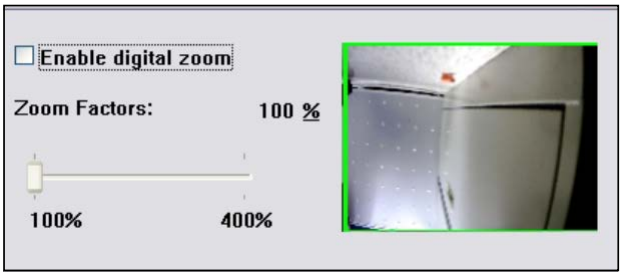
1. : Get into the administration page

2. : Video Snapshot
3. Show system time, video resolution, and video refreshing rate.
4. Adjust image, 1/2x, 1x, 2x.
5. Select video streaming source. (When streaming 2 setting in 『Video Setting』 is closed, this function will not display.)
6. IP Camera supports 2-way audio. Click the “Chatting” check box. Then you can use microphone which connects to the PC to talk to server side, which is IP Camera side
7. Control the relay output which is connected to this camera.



Right-Click the mouse on the video, it will show a pop-up menu.

1. Snapshot: Save a JPEG picture
2. Record Start: Record the video in the local PC. It will ask you where to save the video. To stop recording, right-click the mouse again. Select “Record Stop”. The video format is AVI. Use Microsoft Media Player to play the recorded file.
3. Mute: Turn off the audio. Click again to turn on it.
   The "mute" button does not affect the playback recording video. As long as the "IP Camera to PC" option in the audio setting is enabled, all the audio will be recorded into the playback video even you click "mute" in the live page.
4. Full Screen: Full-screen mode.
5. ZOOM: Enable zoom-in and zoom-out functions. Select “Enable digital zoom” option first within the pop-up dialogue box and then drag and drop the bar to adjust the zoom factors.



6. Frame Buffm Sec: Build a buffm to accumulate several video frame and play at regular intervals. This function can make video smooth-going when the Network speed is slow and lag. If you select “100”, the interval between every frame is fixed to 100 mSec. The slower the Network is, the bigger value should be selected. The default value is null.

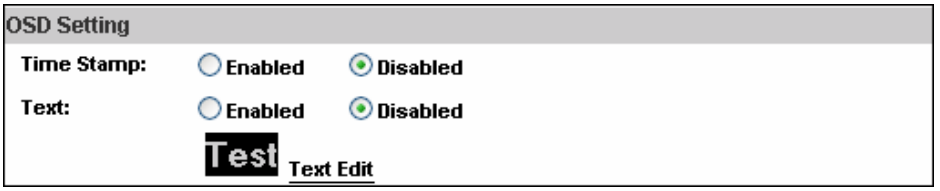
V. IP Camera Configuration

Click to get into the administration page. Click to go back to the live video page.

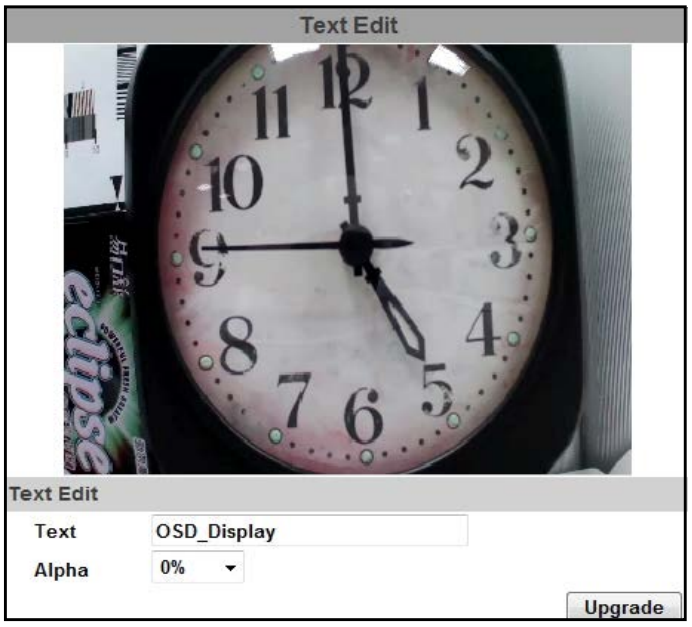
A. System

1. System Information
   a. Server Information: Set up the camera name, select language, and set up the camera time.
      (i) Server Name: This is the Camera name. This name will show on the IP Installer.
      (ii) Select language: There are 11 languages to choose from. When you change the language, it will show the following dialogue box for confirmation.

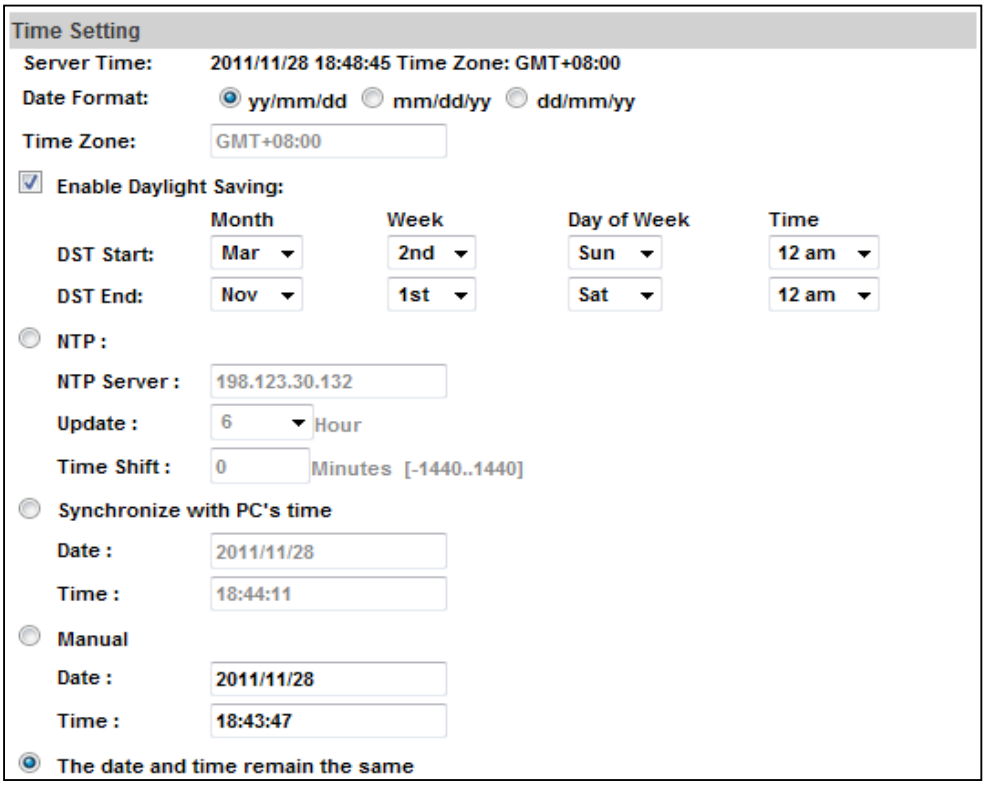
   b. OSD Setting: Select a position where date & time stamp / text showing on screen.



Moreover, click Text Edit can entry to adjust the OSD contents which is Alpha of text. Finally, click Upgrade button to reserve the setting.

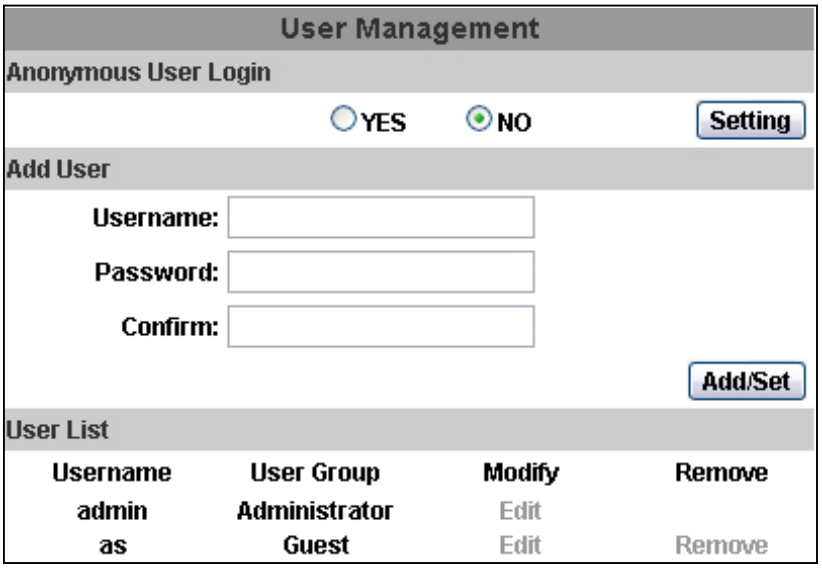


c. Server time setting: Select options to set up time - “NTP”, “Synchronize with PC’s time”, “Manual”, “The date and time remain the same”.
Note: To synchronize with the NTP Server, please set the IP camera up on the WAN instead of LAN.


Time Setting
Server Time: 2011/11/28 18:48:45 Time Zone: GMT+08:00
Date Format: yy/mm/dd mm/dd/yy dd/mm/yy
Time Zone: GMT+08:00
Enable Daylight Saving:
Month Week Day of Week Time
DST Start: Mar 2nd Sun 12 am
DST End: Nov 1st Sat 12 am
NTP :
NTP Server : 198.123.30.132
Update : 6 Hour
Time Shift : 0 Minutes [-1440..1440]
Synchronize with PC's time
Date : 2011/11/28
Time : 18:44:11
Manual
Date : 2011/11/28
Time : 18:43:47
The date and time remain the same

2. User Management

IP CAMERA supports three different users, administrator, general user, and anonymous user.



a. Anonymous User Login:

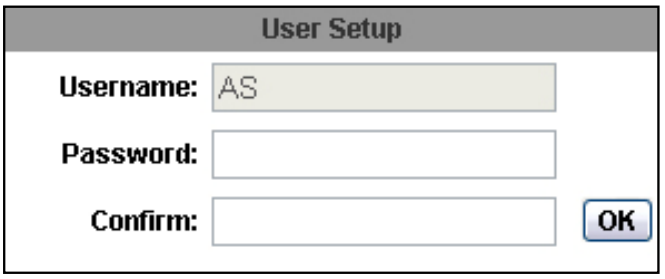
Yes: anonymous login is allowed

No: Username & password are required to access this IP camera

b. Add user:

Type the user name and password, then click “Add/Set”.The guest user can only browse the live video page and is not allowed to enter the configuration page.

c. Click “edit” or “delete” in the user list to modify them. The system will ask you to key in the password in the pop-up window before you edit the user information.



3. System update:

a. To update the firmware online, click “Browse…” to select the firmware. Then click “Upgrade” to proceed.
Note: The firmware upgrade might be accompanied by the changing of some setting and function, and the setting options might become different to the user manual that you're reading now.

b. Reboot system:re-start the IP camera

c. Factory default:delete all the settings in this IP camera.

d. Setting Management:User may download the current setting to PC, or upgrade from previous saved setting.

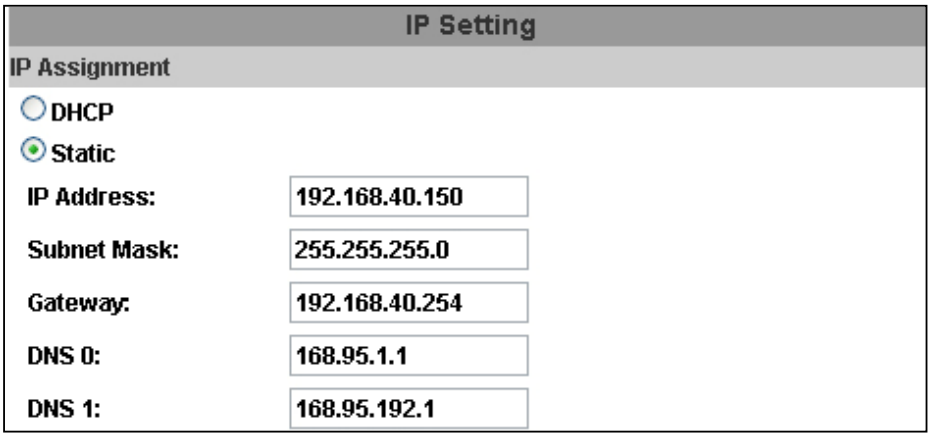
(i) Setting download:
Right-click the mouse button on Setting Download → Select “Save AS…” to save current IP CAM setting in PC → Select saving directory → Save

(ii) Upgrade from previous setting:
Browse → search previous setting → open → upgrade → Setting update confirm → click index.html. to return to main page

B. Network

1. IP Setting

a. IP Assignment

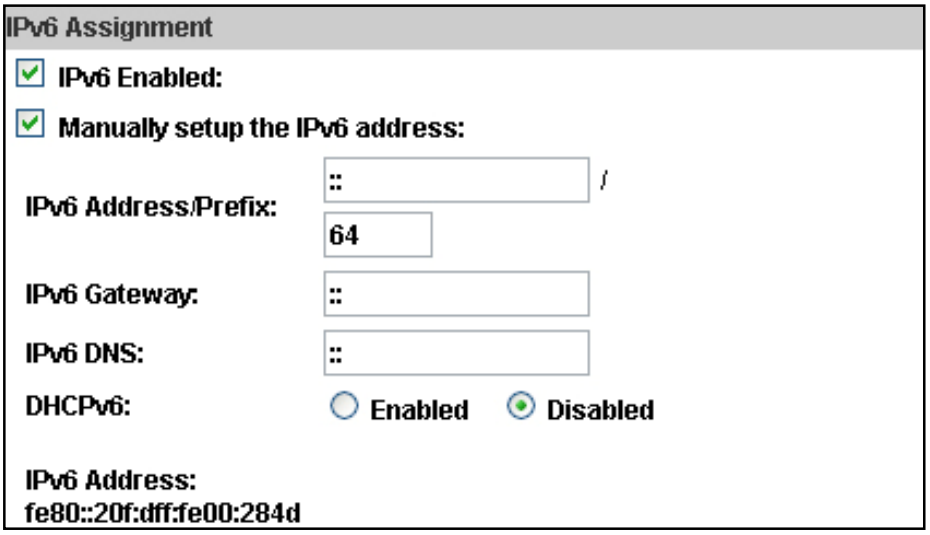


IP Camera supports DHCP and static IP.

(i) DHCP: Using DHCP, IP CAMERA will get all the network parameters automatically.

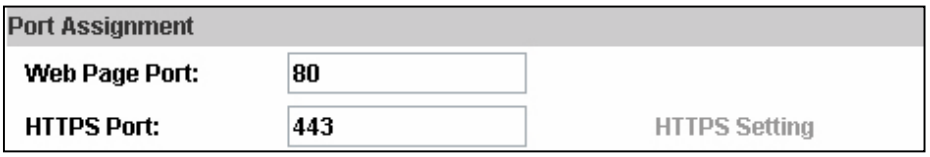
(ii) Static IP: Please type in IP address, subnet mask, gateway, and DNS manually.

b. IPv6 Assignment



IPv6 is a newer numbering system that provides a much larger address pool than IPv4, which accounts for most of today's Internet traffic. You can set up IPv6 manually by key in Address, Gateway, and DNS, or enable DHCP to assign the IP automatically.

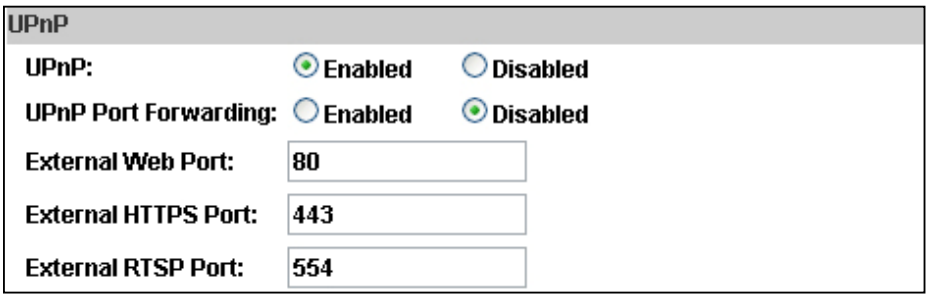
c. Port assignment



(i) Web Page Port: setup web page connecting port and video transmitting port (Default: 80)

(ii) HTTP Port:setup HTTPS connecting port (Default:443)

d. UPnP (Universal Plug and play)



This IP camera supports UPnP, if this service is enabled on your computer, the camera will automatically be detected and a new icon will be added to “My Network Places.”

(i) UPnP Port Forwarding:

When the camera is installed under a router, Enable UPnP Port Forwarding to let the router open ports so that the video streams can be sent out from a LAN. Set Web Port, Http Port, and RTSP port, and make sure your router supports UPnPTM and the function has been activated.

(ii) Note: UPnP must be enabled on your computer. Please follow the procedure to activate UPnP.

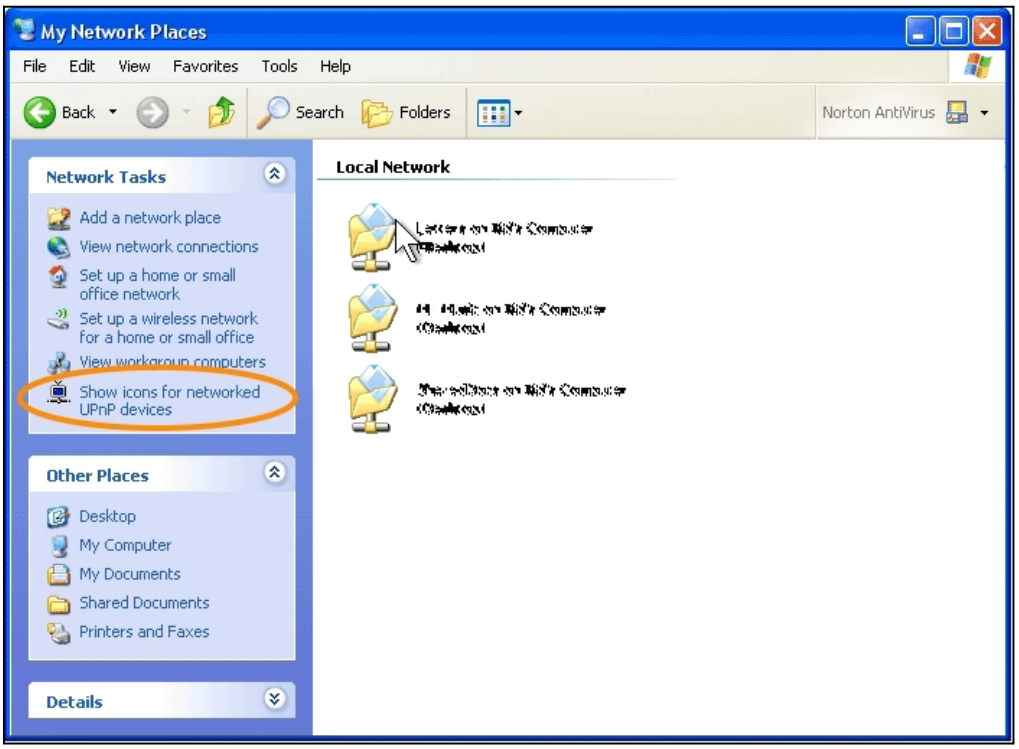
<Approach 1>

- Open the Control Panel from the Start Menu
- Select Add/Remove Programs
- Select Add/Remove Windows Components and open Networking Services section
- Click Details and select UPnP to setup the service
- The IP device icon will be added to “MY Network Places”
- User may double click the IP device icon to access IE browser

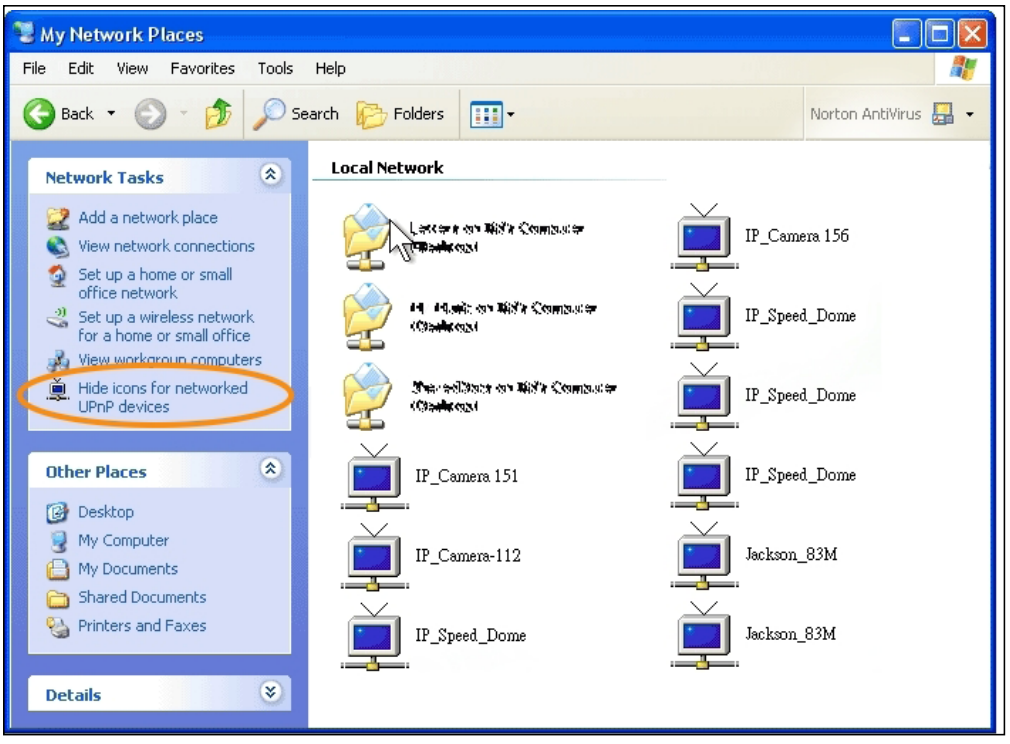
<Approach 2>

- Open "My Network Space", and click "Show icons for networked UPnP devises" in the tasks column on the left of the page.

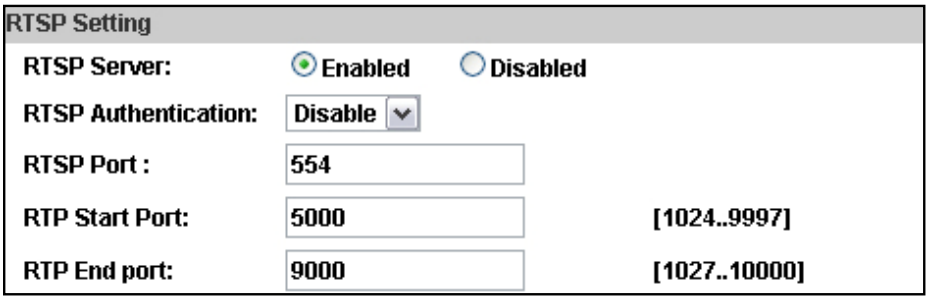
Windows may ask your confirmation for enabling the components. Click "Yes".



- Now you can see the IP devise under the LAN. Double-click the icon to access the camera via web browser. To disable the UPnP, click "Hide icons for networked UPnP devises" in the tasks column.



e. RTSP setting



If you have a media player that supports RTSP protocol, you can use it to receive the video streaming from IP camera. The RTSP address can be set for two streaming respectively. Please jump to Chapter V-C:"Video Setting". There're setting field for RTSP address of two streamings.

(i) RTSP Server: enable or disable

(ii) RTSP Authentication:

"Disable" means everyone who knows your camera IP Address can link to your camera via RTSP. No username and password are required.

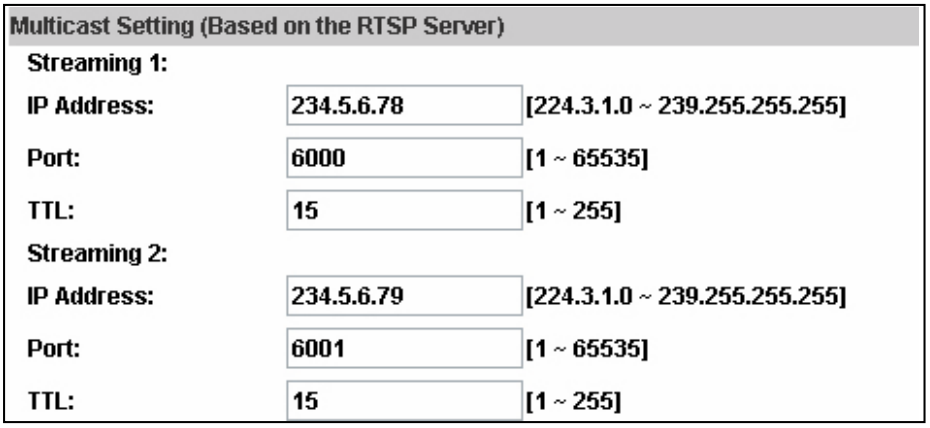
Under "Basic" and "Digest" authentication mode, the camera asks the user to give username and password before allows accessing. The password is transmitted as clear text under basic mode, which provides a lower level of security than under digest mode.

Make sure your media player supports the authentication schemes.

(iii) RTSP Port: setup port for RTSP transmitting (Default: 554)

(iv) RTSP Start and End Port: in RTSP mode, you may use TCP and UDP for connecting. TCP connection uses RTSP Port (554). UDP connection uses RTSP Start and End Port.

f. Multicast Setting (Based on the RTSP Server)

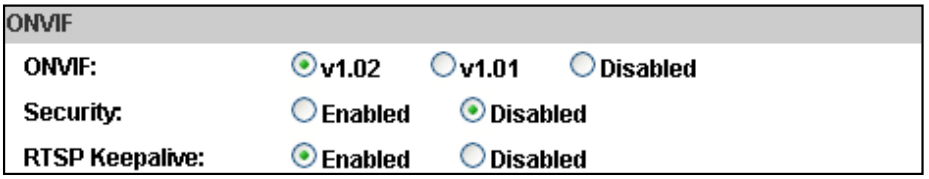


Multicast is a bandwidth conservation technology. This function allows several user to share the same packet sent from IP camera. To use

Multicast, appoint IP Address and port here. TTL means the life time of packet, the larger the value is, the more users can receive the packet.

To use Multicast, be sure to enable the function "Force Multicast RTP via RTSP" in your media player. Then key in the RTSP path of your camera: "rtsp://(IP address)/" to receive the multicast.

g. ONVIF



(i) Choose your ONVIF version and settings.

Under ONVIF connection, the video will be transmitted by RTSP. Be sure to enable the RTSP server in IP setting, or you're not able to receive the video via ONVIF.

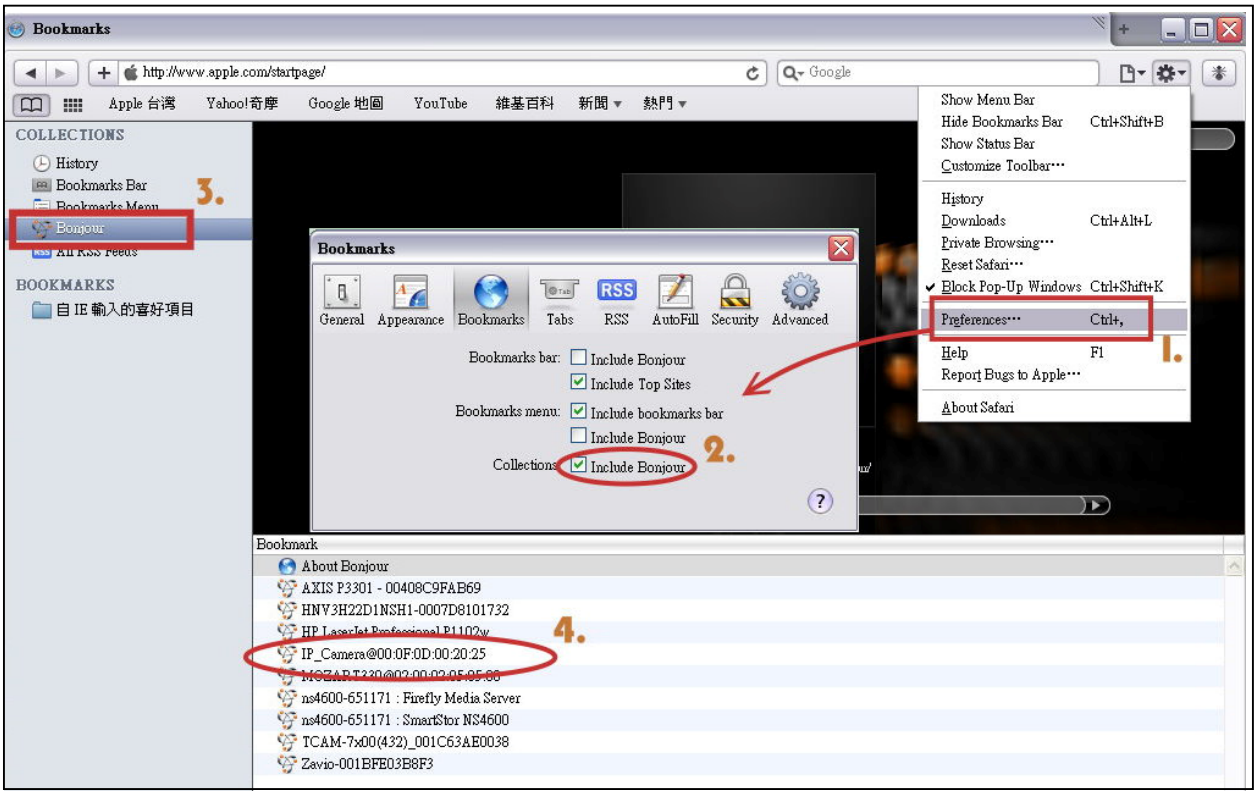
(ii) RTSP Keepalive:

When the function is enabled, the camera checks once in a while if the user who links to the camera via ONVIF still keeps connecting. If the connection had been broken, the camera stop transmitting video to user.

h. Bonjour

This function enables MAC systems to link to this IP camera. Key in the name here.

The web browser "Safari" also has Bonjour function. Tick "Include Bonjour" in the bookmark setting, and you can see the IP camera appearing under the bonjour category. Click the icon to connect the IP camera.



i. LLTD

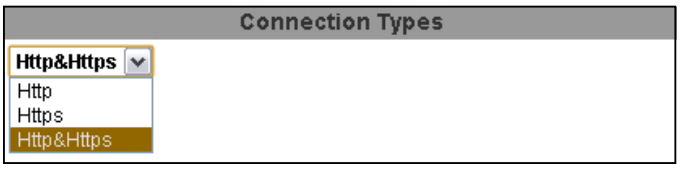
If your PC supports LLTD, enable this function then you can check the connection status, properties, and device position(like IP address) of this IP Camera in the network map.

In the computer running Windows Vista or Windows 7, you can find LLTD through the path:

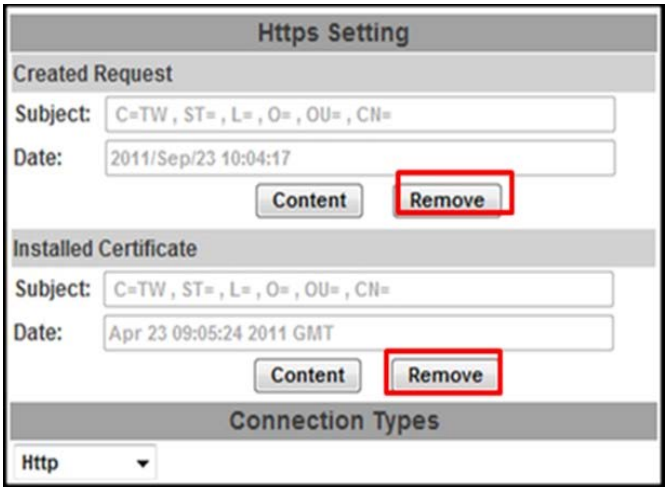
Call out the Control Panel → Network and Internet → Network and Sharing Center → Click "See full map".

2. Advanced

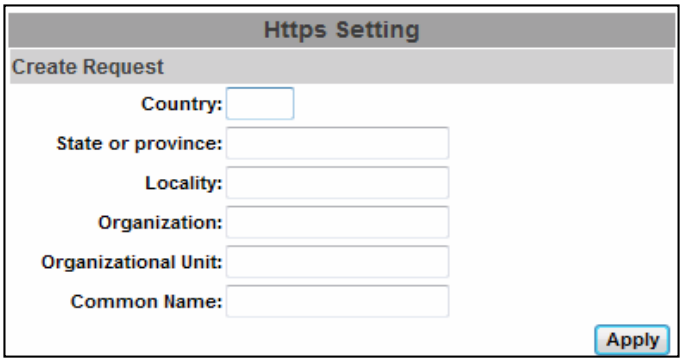
a. Https (Hypertext Transfer Protocol Secure): Https can help protect streaming data transmission over the internal on the higher security level. You can select the connection type. "Https" means user cannot connect the camera via Http protocol. The Https path will be: "https://(IP address)/". If you select "Http & Https", both the Http and Https path can be used to access the camera.



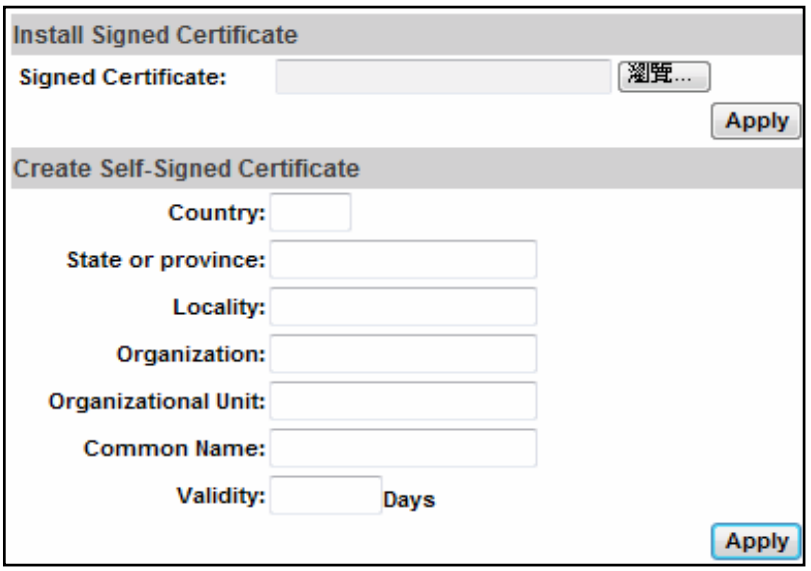
(i) Remove the existing setting: Before setting new request, please remove old secure identification. Select "Http" connection type and click "Remove".



(ii) Created Request: Setting the secure identification and apply it.



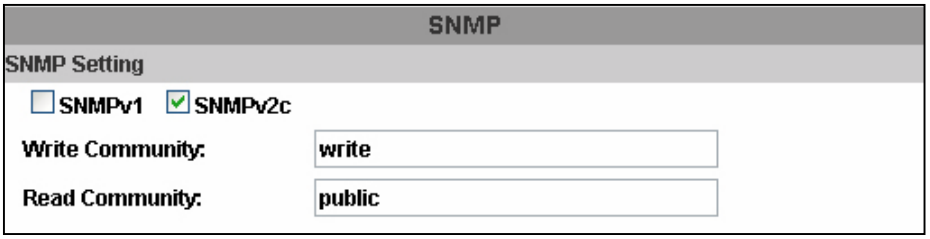
(iii) There are two ways to set Certificate- Install Signed Certificate or Create Self-Signed Certificate.



b. SNMP(Simple Network Management Protocol)

SNMP provides a simple framework for administering networked hardware. To manage the IP camera, you have to prepare a MIB browser or similar tools first. SNMPv1, SNMPv2c, and SNMPv3 can be enabled simultaneously.

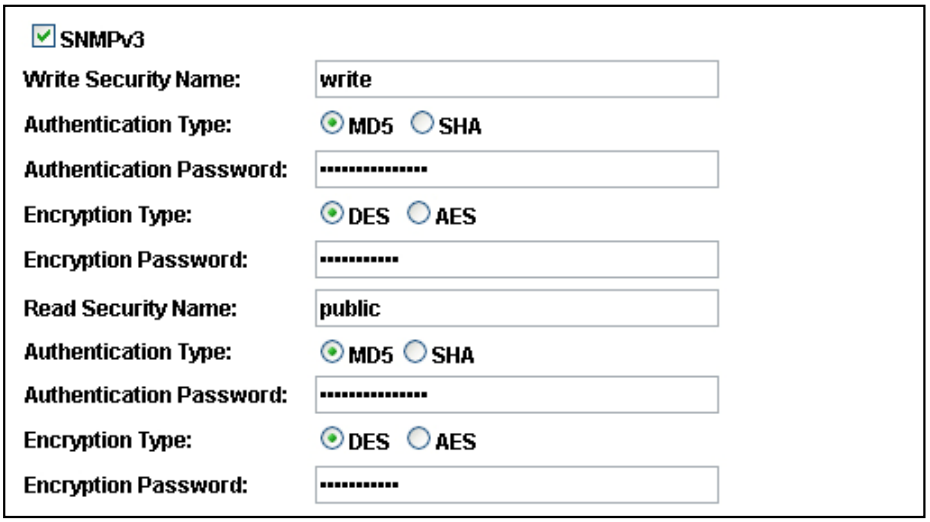
(i) SNMPv1 and SNMPv2:



The term "Community name" in SNMPv1 and SNMPv2c can be roughly regarded as key. The person who has the community name has the authority to read or edit the information of IP camera via SNMP.

Tick the box to enable SNMPv1 or SNMPv2c protocol, and specify the community name for write(read and write) and read(read-only). The user who use read community name to access the IP camera cannot modify any data of this camera.

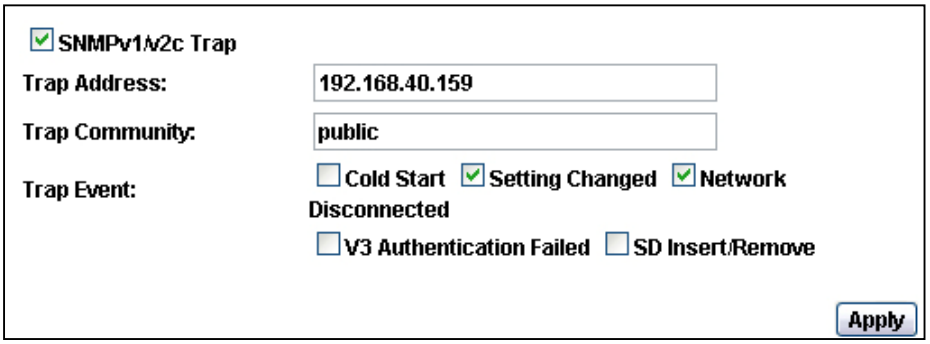
(ii) SNMPv3:



For data security reason, the authentication and encryption assurances are added when developing SNMPv3. The user has to give not only the security name(the same as "community name" in v1&v2c, or sometimes we call it "context name") but the password in order to access the IP camera. Please set security name, authentication type, authentication password, encryption type, encryption password of write and read respectively. The password must be 8~64 bits in length.

Different from in SNMPv1 and v2c, the user have to create an account when using SNMPv3. In the account parameters, key in the security name and password you set in the camera to get accessing.

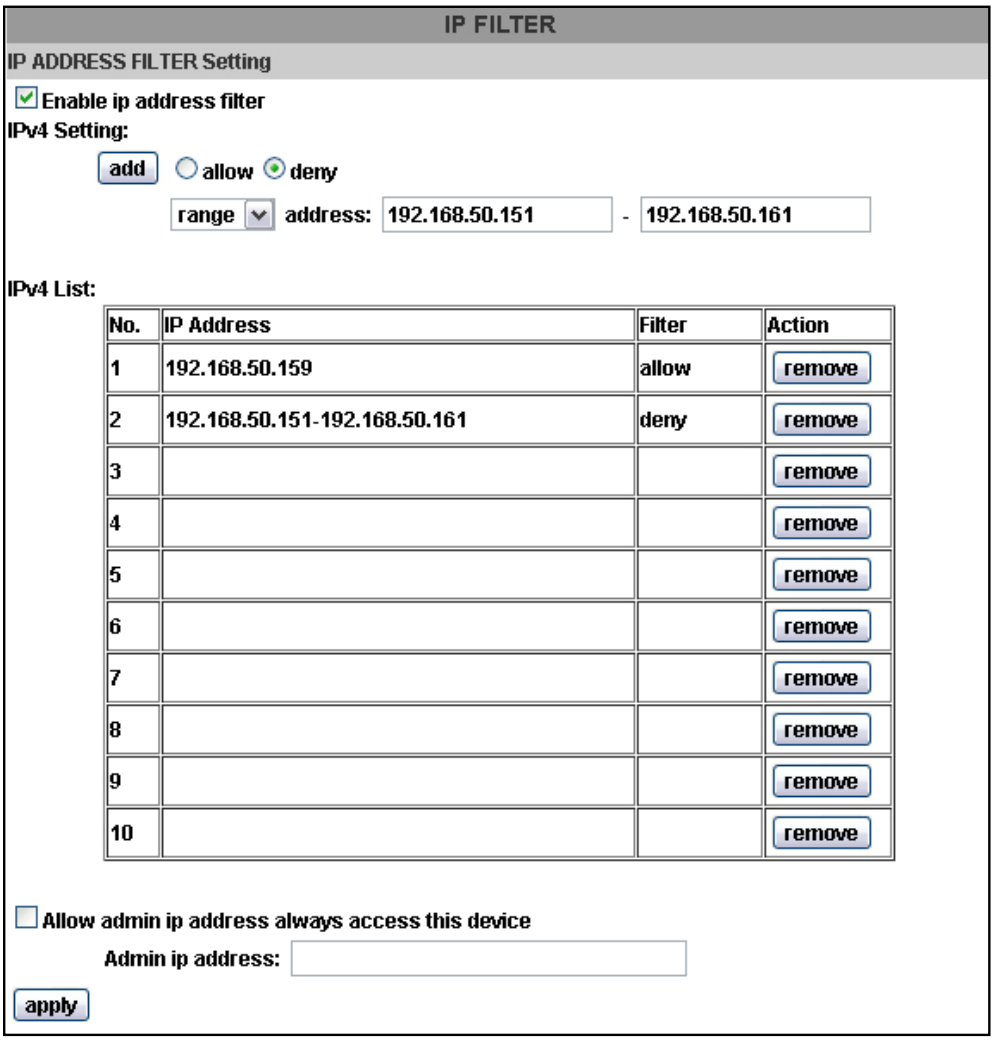
(iii) SNMPv1/SNMPv2 Trap:



Trap is a mechanism that allows the a managed device to send messages to manager instead of waiting passively for polling from the manager. Specify the trap event. When those events happen, the camera will send the ring message to the Trap Address, which is usually the manager's IP address. Trap Community means the community that can receive the trap message.

- Cold Start: The camera starts up or reboots.
- Setting changed: The SNMP setting is changed.
- Network Disconnected: The network connection was broken down. (The camera will send trap messages after the network being connected again)
- V3 Authentication Failed: A SNMPv3 user account tries to get authentication but failed. (Due to incorrect password or community)
- SD Insert / Remove: A Micro SD card is inserted or removed.

c. Access List

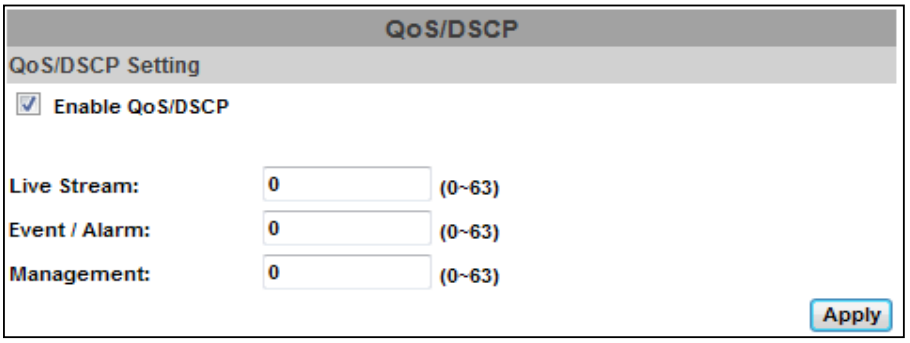


You can deny an IP address or a range of IP address so that they cannot access the IP camera. Tick the "enable" box, key in the IP address you want to deny, select"deny" then click"Add" to add it to the list.

You can also choose to deny a range of IP address but allow one or several IP address of them. Take the picture above for example, IP address 192.168.50.151~161 are not allowed to connect to the camera, but only

192.168.50.159 can access. Note: In the list "allow" condition must be ranked before "deny" condition. For example, if we exchange the sequence, set "Deny: 192.168.50.151~192.168.50.161" for the first item and "Allow: 192.168.50.159" for the second item in the list, the IP "192.168.50.159" turns out to be denied by the camera because the "deny" condition has the priority according to our ranking way.

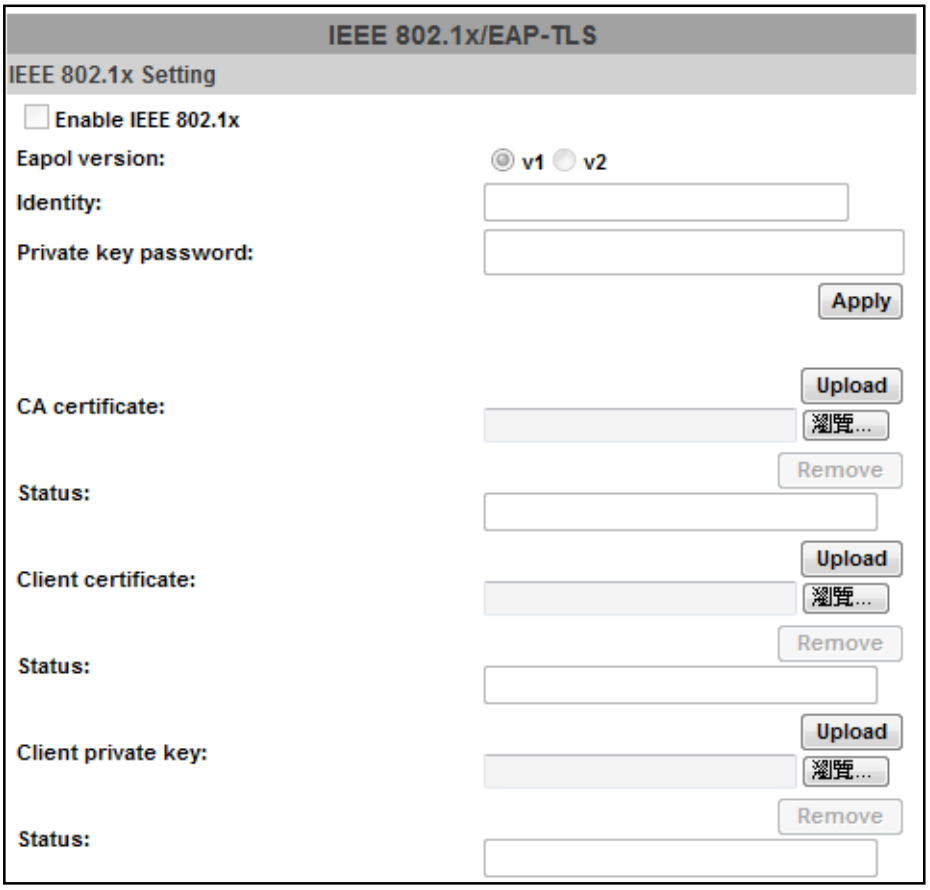
d. QoS/DSCP(Quality of Server/Differentiated Services Code-point)



DSCP specifies a simple mechanism for classifying and managing network traffic and provide QoS on IP networks. DSCP is a 6-bit in the IP header for packet classification purpose.

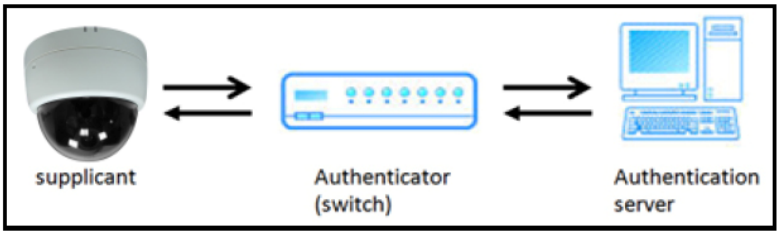
The number 0~63 for Live Stream, Event / Alarm, and Management represent the ratio that the bandwidth is divided. For example, if you set 5, 10, and 20 for the three items, then the bandwidth of the three item is 5:10:20. There is no difference between setting "0, 0, 0" or "63, 63, 63" because under these two setting the three items will get equal bandwidth (1/3).

e. IEEE 802.1x



IEEE 802.1x is an IEEE standard for port-based Network Access Control. It provides an authentication mechanism to device wishing to attach to a LAN or WLAN.

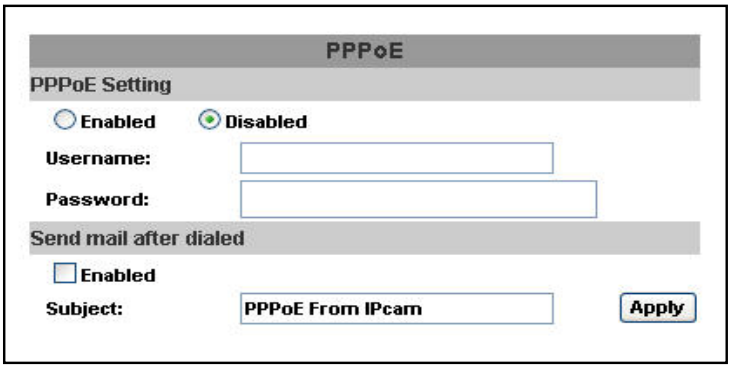
The EAPOL protocol support service identification and optional point to point encryption over the local LAN segment.



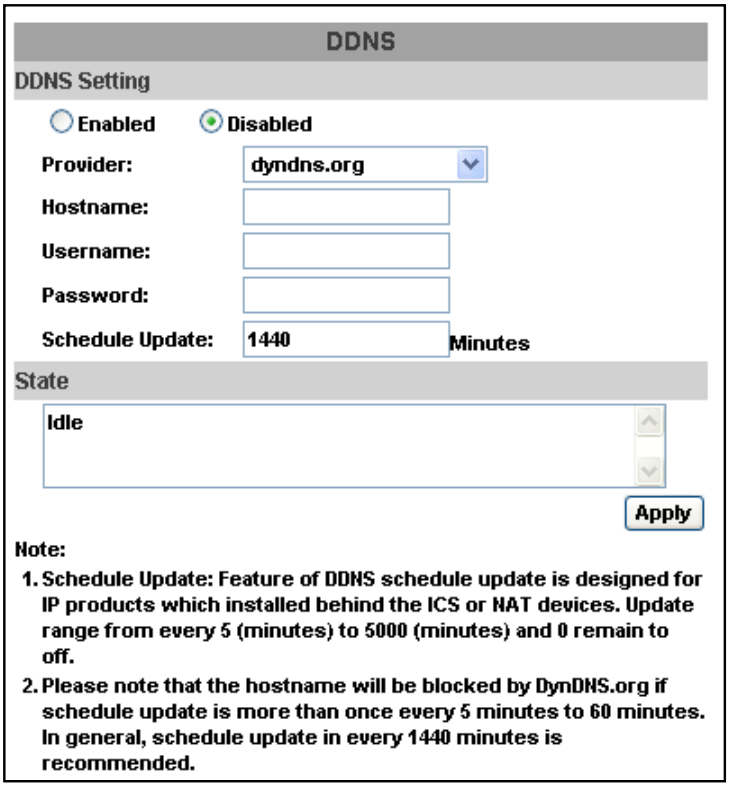
Please check what version of the authenticator and authentication server support. This camera supports EAP-TLS method. Please enter ID, password issued by the CA, then upload related certificates.

3. PPPoE & DDNS

a. PPPoE: Select “Enabled” to use PPPoE. Key-in Username and password for the ADSL connection. Send mail after dialed: When connect to the internet, it will send a mail to a specific mail account. For the mail setting, please refer to Server settings.



b. DDNS:


DDNS
DDNS Setting
Enabled
Disabled
Provider:
dyndns.org
Hostname:
Username:
Password:
Schedule Update:
1440
Minutes
State
Idle
Apply
Note:
1. Schedule Update: Feature of DDNS schedule update is designed for IP products which installed behind the ICS or NAT devices. Update range from every 5 (minutes) to 5000 (minutes) and 0 remain to off.
2. Please note that the hostname will be blocked by DynDNS.org if schedule update is more than once every 5 minutes to 60 minutes. In general, schedule update in every 1440 minutes is recommended.

It supports DDNS (Dynamic DNS) service.

(i) Enable this service

(ii) Key-in the DynDNS server name, user name, and password.

(iii) Set up the IP Schedule update refreshing rate.

(iv) Click “Apply”

(v) If setting up IP schedule update too frequently, the IP may be blocked. In general, schedule update every day (1440 minutes) is recommended

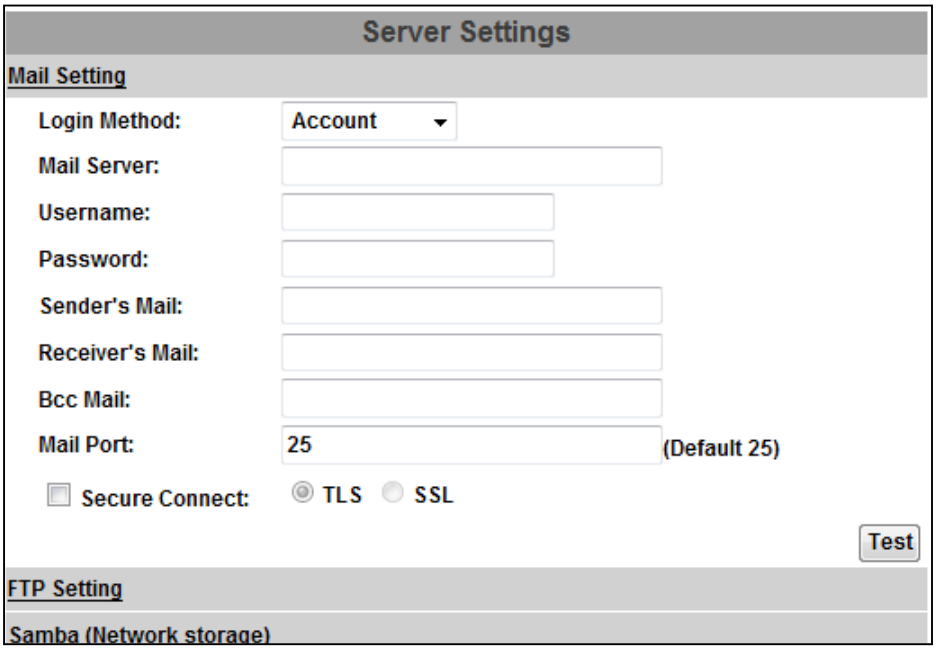
(vi) DDNS Status

- Updating: Information update
- Idle: Stop service
- DDNS registration successful, can now login
- Update Failed, the name is already registered: The user name has already been used. Please change it.
- Update Failed, please check your internet connection: Network connection failed.
- Update Failed, please check the account information you provide: The server, user name, and password may be wrong.

4. Server setting

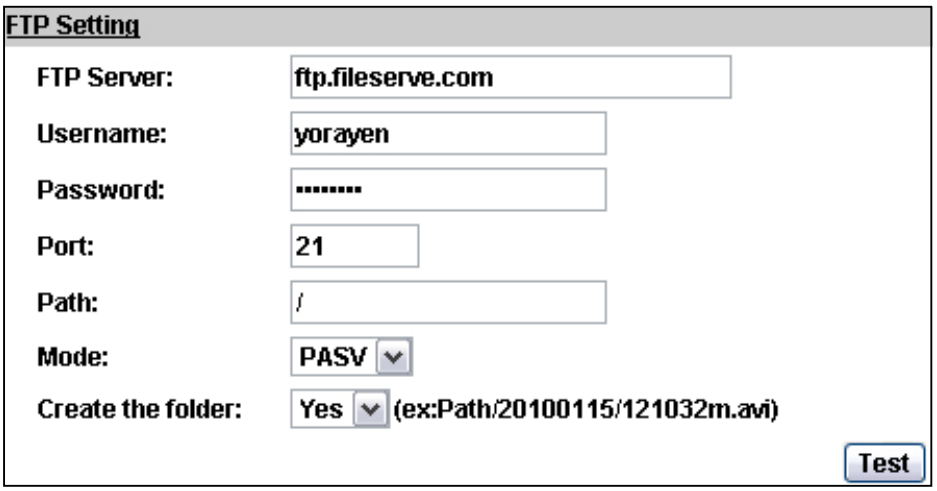
The settings of Email, FTP and SAMBA are used when the event happens, schedule snapshot executes, or the alarm input is triggered. Select the item to display the detailed configuration options. You can configure either one or all of them.

a. Mail Setting:



Set up the server address and account information of your e-mail. Click “Apply” to save the setting, then use “Test” button to test the server connection. A message box will tell you “OK!” if it works, and a test e-mail will be sent to receiver’s mail address.

b. FTP:

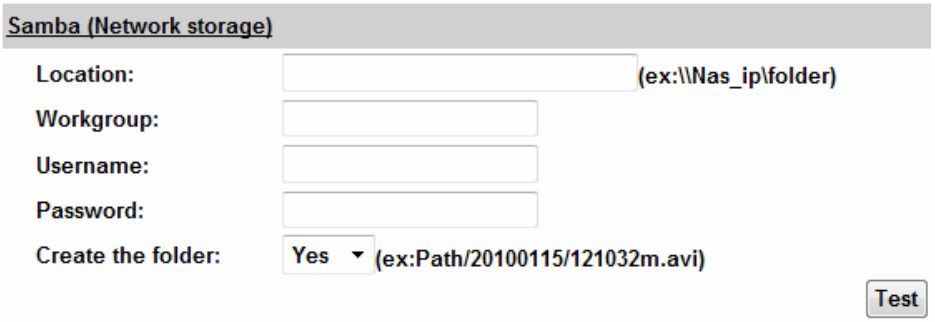


Set up the server address and account information of your FTP. Click “Apply” to save the setting, then use “Test” button to test the server

connection. A message box will tell you “OK!” if it works, and a test file will be uploaded to FTP space.

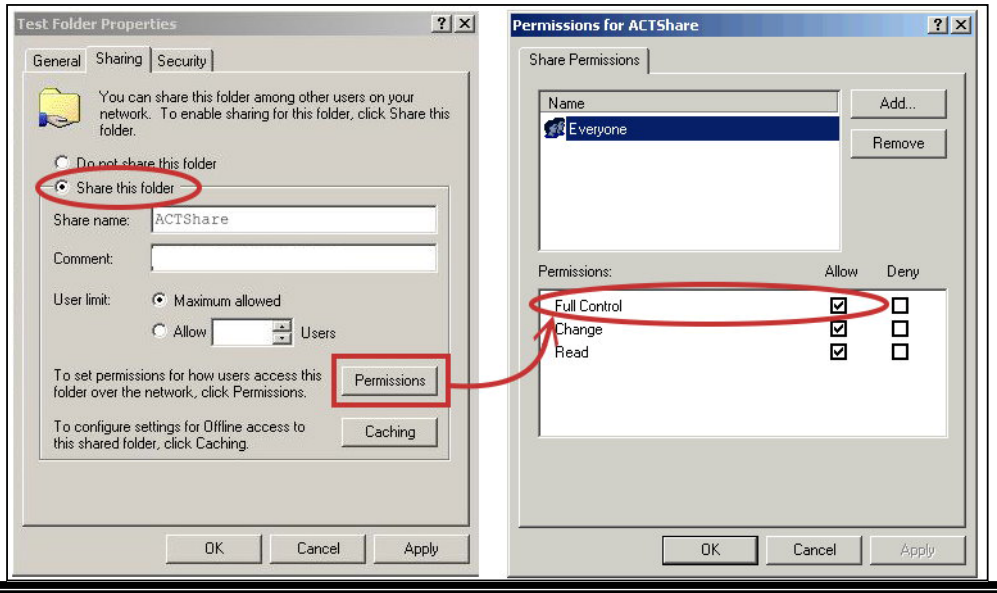
In PORT mode, the FTP server builds the connection to the user's data port actively. However, from the user-side firewall's standpoint, the action of connecting from FTP server is often considered to be dangerous and should be blocked. In PASV mode, the problem is solved: The FTP server waits for the data transmission connection built by the user. Make sure that the server supports the mode you select.

c. Samba:



Select this option to send the media files via a network neighborhood when an event is triggered. Click “Apply” to save the setting, then use “Test” button to test the server connection. A message box will tell you “OK!” if it works, and a test document will be created in the location.

If the test failed, check the sharing setting of your location folder. The folder properties must be “shared” and the permissions must be “Full Control” as the picture.



C. A/V Setting

1. Image Setting

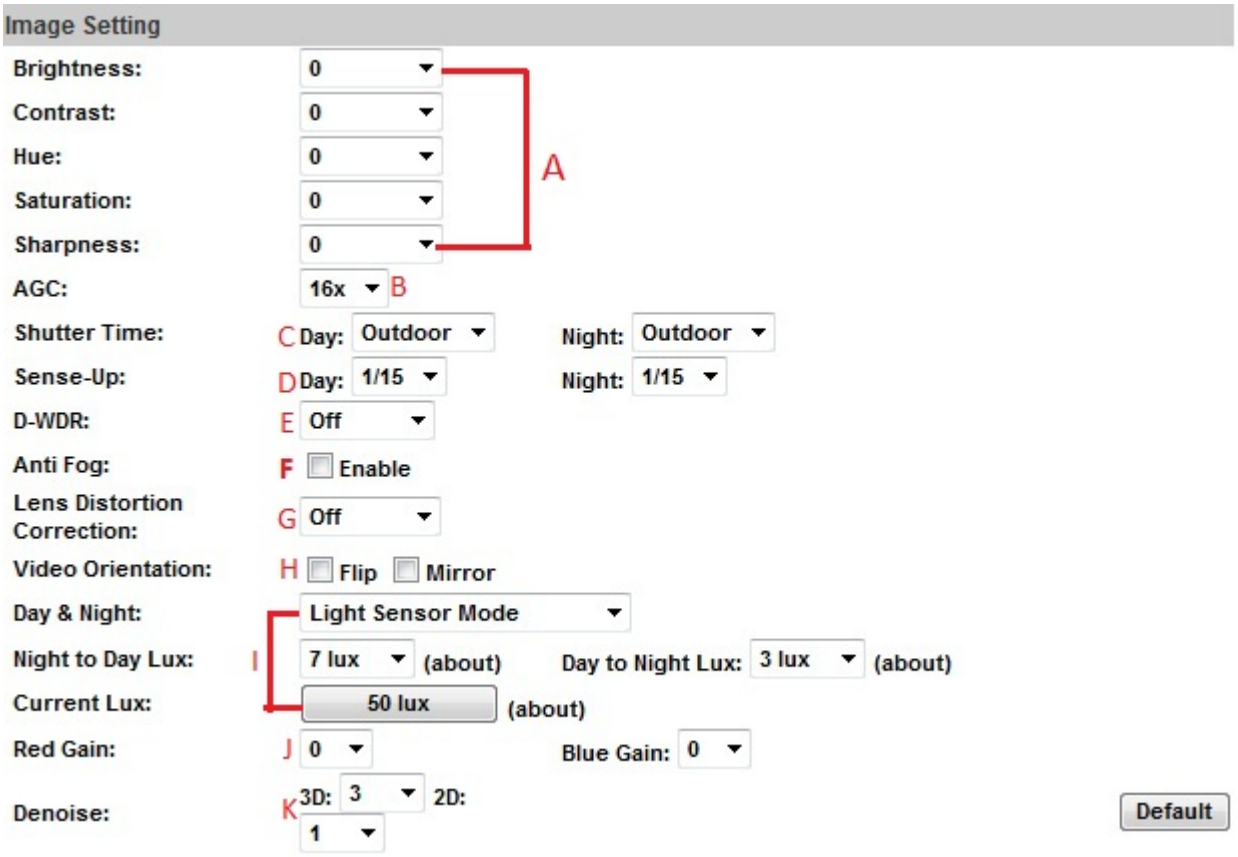


Image Setting
Brightness: 0
Contrast: 0
Hue: 0
Saturation: 0
Sharpness: 0
A
AGC: 16x B
Shutter Time: C Day: Outdoor Night: Outdoor
Sense-Up: D Day: 1/15 Night: 1/15
D-WDR: E Off
Anti Fog: F Enable
Lens Distortion Correction: G Off
Video Orientation: H Flip Mirror
Day & Night: Light Sensor Mode
Night to Day Lux: I 7 lux (about) Day to Night Lux: 3 lux (about)
Current Lux: 50 lux (about)
Red Gain: J 0 Blue Gain: 0
Denoise: K 3D: 3 2D: 1
Default

For security and privacy purposes, there are three areas that can be set up for privacy. Click the Area button first, and then drag an area on the above image. Remember to save your settings. The masked area will not shown on both live view and recording image.

Please refer to the details below for image settings:

A. Brightness, Contrast, Hue, Saturation, Sharpness can be adjusted here. The available values are: **-4, -3, -2, -1, 0, 1, 2, 3, 4.**

B. AGC: The sensitivity of the camera can adjust to the environmental lighting. Enable this function for getting brighter image on low light, but the level of noise may also increase. The available values are: **16x, 24x, 32x, 48x, 64x.**

C. Shutter Time: Choose the location of your camera or a fixed shutter time. The shorter the shutter time is the less light the camera receives and the image becomes darker , it can adjust by Day and Night.

The available values are: **Outdoor, Indoor, 1/30, 1/50, 1/60, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/10,000**.

Note: When you select a number in "Shutter Time", the shutter time will vary in a range and be controlled by camera automatically.

D. Sense up: When enabled, provides a higher sensitivity in low light conditions by slowing the shutter speed. The available values are: 1/30, 1/15 , 1/10 , 1/5

E. D-WDR: This function enables the camera to reduce the contrast in the view to avoid dark zones as a result of over and under exposure. If the Input resolution is 30fps, the default value is fixed on ENABLED. The available values are: **OFF, 1, 2, 3, 4, 5, 6, 7, 8**.

If the D-WDR is enabled the values for bright, dark and contrast can be adjusted.

F. Anti Fog: Improve the image clarity on environments presenting high levels of fog or smoke.

G. Lens Distortion Correction: Correct the image in the borders due to the lens angles. The available values are: **OFF, 1, 2, 3, 4, 5, 6, 7, 8**

H. Video Orientation: Flip or mirror the image.

I. Day & Night: The camera can detect the light level of the environment. If you choose "Light Sensor Mode", the image will be turned black and white at night in order to keep a clear image. To set light sensor mode, appoint a lux standard of switching D/N. Current lux value is provided for reference. Under "Times Mode" the switch time of Color / Black and white will be according to the given time. You can also control it by choosing "Color" or "B/W".

J. Red / Blue gain: Set the values for Red / Blue gain. The available values are: **-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5**

K. Denoise: This function is able to filter the noise and blur from the image and show a clearer view. You can set the values for 2D and 3D filters.

2. Video Setting

a. Video System Setting:

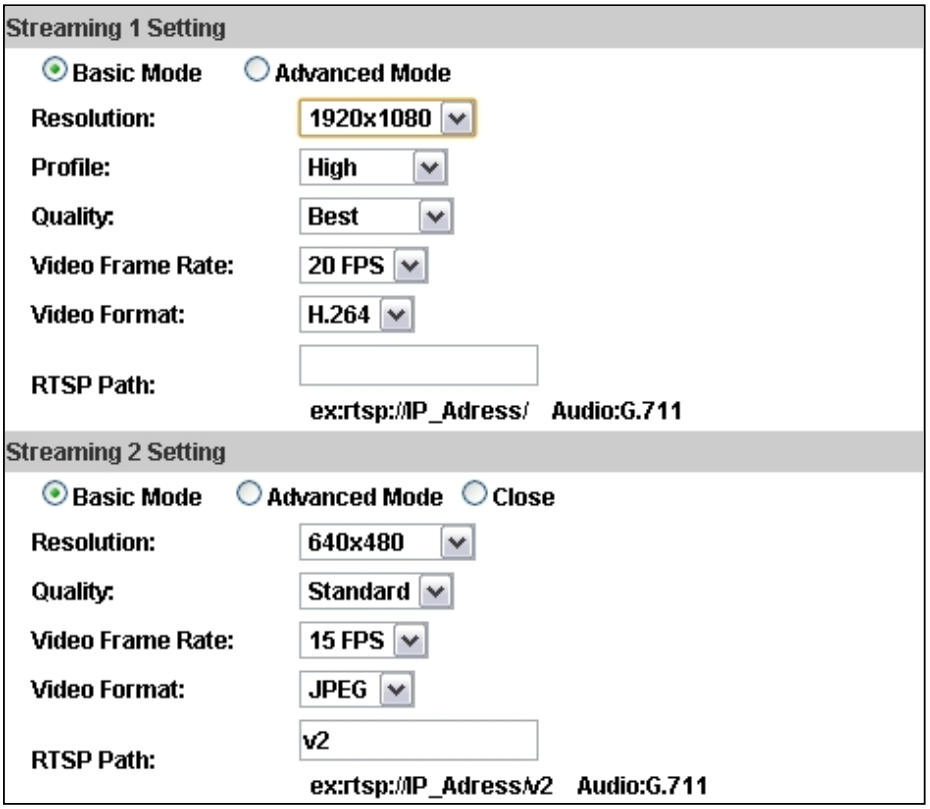
Video System: NTSC or PAL
Corridor Mode: 90 degrees, 270 degrees or none.

On Corridor Mode please take note of the lens' position. If **Corridor Mode** is set as **90 degrees** or **270 degrees** the relation of the image and the camera would be as the following:

Image	Position
	0 degrees
	90 degrees
	270 degrees

Choose the Video System (digital signal) and TV Output (analog signal).

b. Basic Mode of Streaming 1 and Streaming 2:



(i) Resolution: 1920x1080,1280x720 , 640x480, 320x240, or 176x144

(ii) Profile: Profiles are different compression way of H.264. High profile provides better coding efficiency. Note that some devises do not support every profile. For example, iPhone4 only supports Main profile.

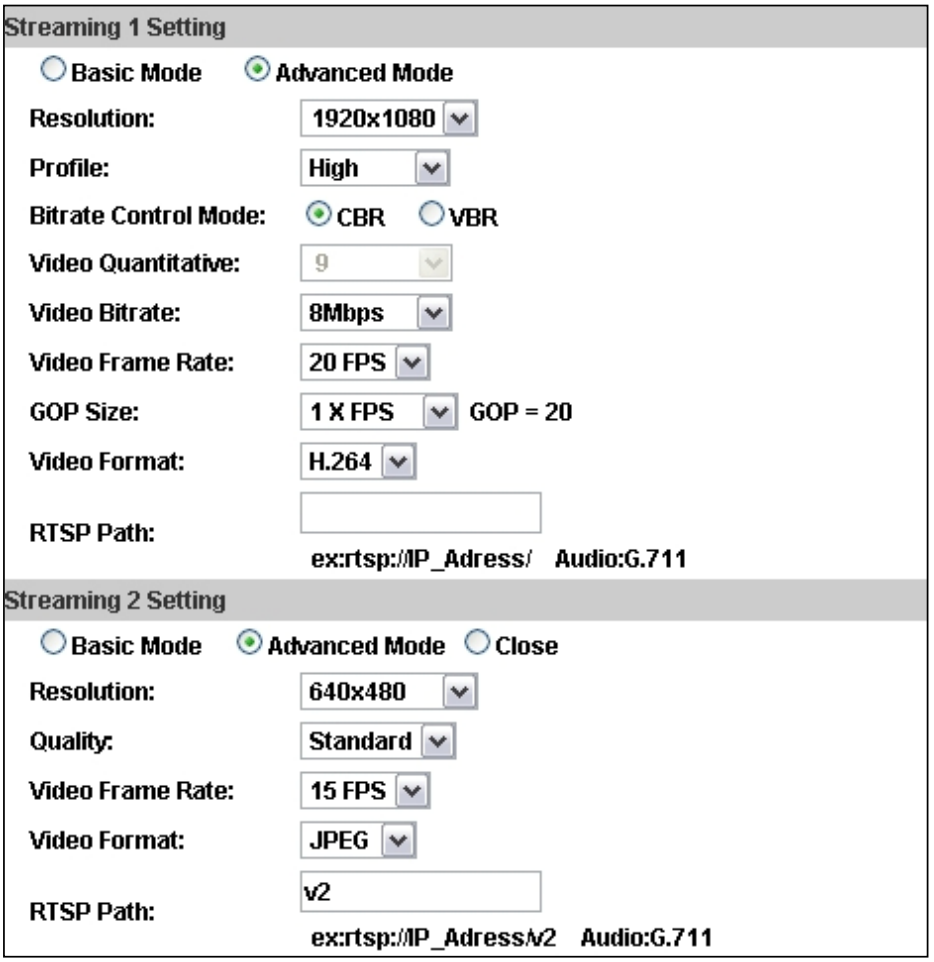
(iii) Quality: The higher the quality is, the bigger the file size is. It might affect Internet transmitting speed if the file gets too large.

(iv) Video Frame Rate: The video refreshing rate per second. The max value is affected by the input resolution you choose.

(v) Video Format: H.264 or M-JPEG

(vi) RTSP Path: Set the RTSP output connecting route

c. Advanced Mode of Streaming 1 and Streaming 2:



(i) Resolution: 1920x1080,1280x720 , 640x480, 320x240, or 176x144

(ii) Profile: High profile provides better coding efficiency. Note that some devises do not support every profile. For example, iPhone4 only supports Main profile.

(iii) Bitrate Control Mode: In CBR(Constant Bit Rate) mode, the bitrate keeps consistent all over the video. In VBR(Variable Bit Rate) mode, the bitrate changes with the complexity extent of the video data. VBR provides a better compression way and the file may be smaller. However, the VBR file size cannot be predicted.

(iv) Video Quantitative: The quality parameter of VBR. You can choose 1~10 compression rate

(v) Video Bitrate: The quality parameter of CBR. You can choose 32kbps~8Mkbps. The higher the value is, the higher the image quality is.

(vi) Video Frame Rate: The video refreshing rate per second. The max value is affected by the input resolution you choose.

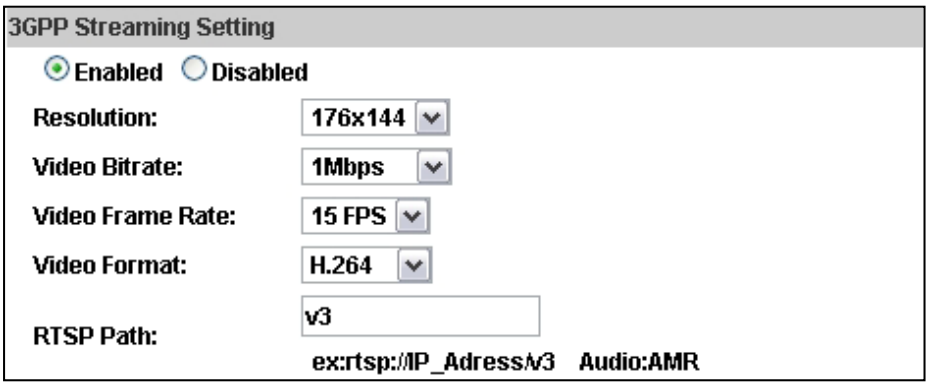
(vii) GOP Size: It means “Group of Pictures”. The higher the GOP is, the

better the quality is.

(viii) Video Format: H.264 or M-JPEG

(ix) RTSP Path: RTSP output connecting route

d. 3GPP Streaming mode:



3GPP Streaming is designed for mobile viewing. Please lower the resolution, bitrate, or frame rate if the image flow isn't smooth when you use the mobile phone.

(i) Resolution: 640x480, 320x240, or 176x144

(ii) Video Bitrate: The higher the value is, the higher the image quality is.

(iii) Video Frame Rate: The video refreshing rate per second.

(iv) Video Format: H.264 or MPEG4

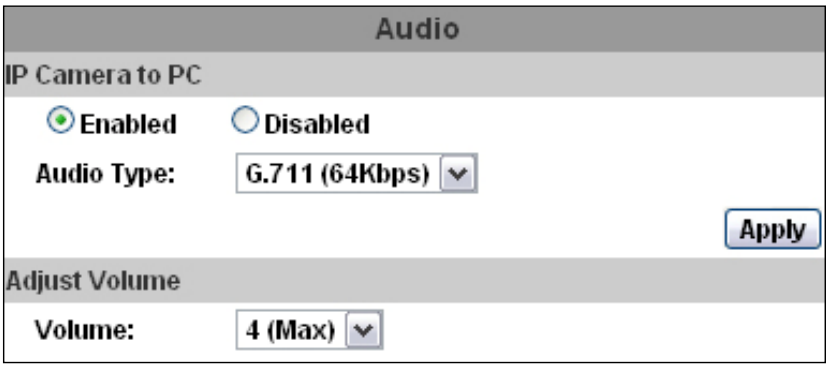
(v) 3GPP Path: 3GPP output connecting route. If the IP address of your camera is 192.168.40.150, and you key in “3g” in the column, the 3GPP path will be rtsp://192.168.40.150/3g.

The rtsp here is separated from the rtsp setting in the "IP SETTING". 3GPP Streaming can still work even you select "disabled" in the rtsp server option of IP Setting.

3. Audio:

IP Camera supports 2-way audio. Audio can be receive by the built-in mic in the IP camera and transmitted to remote PC. User can also send audio from remote PC mic to IP Camera's external speaker.

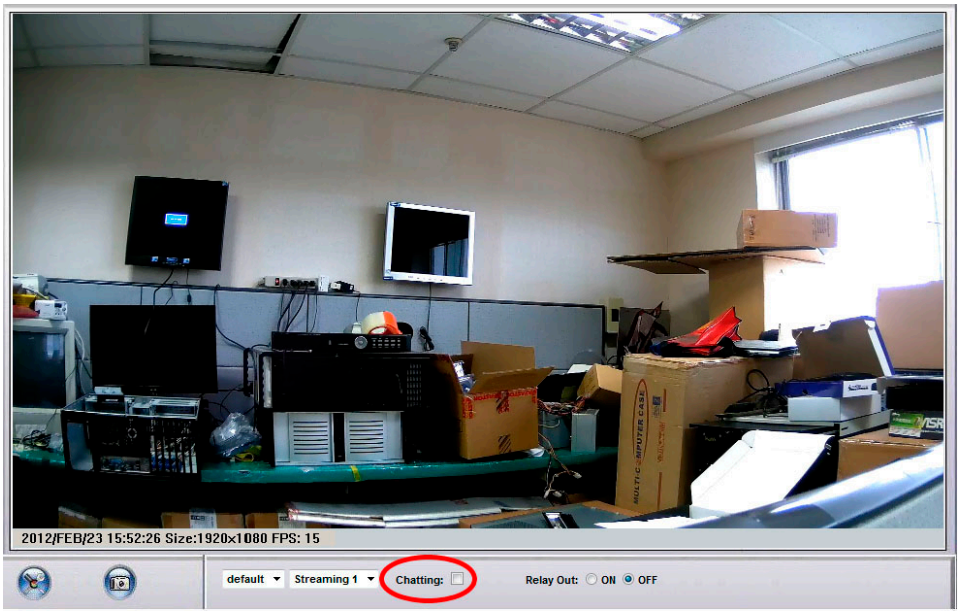
a. IP Camera to PC



To receive Audio from IP camera, select "Enable" to start this function. The Audio compression format can be choosing from 3 options. You can also adjust the volume of 2-way audio.

b. PC to IP Camera

Tick "chatting" box in the browsing page, then your voice can be propagated from PC to camera.



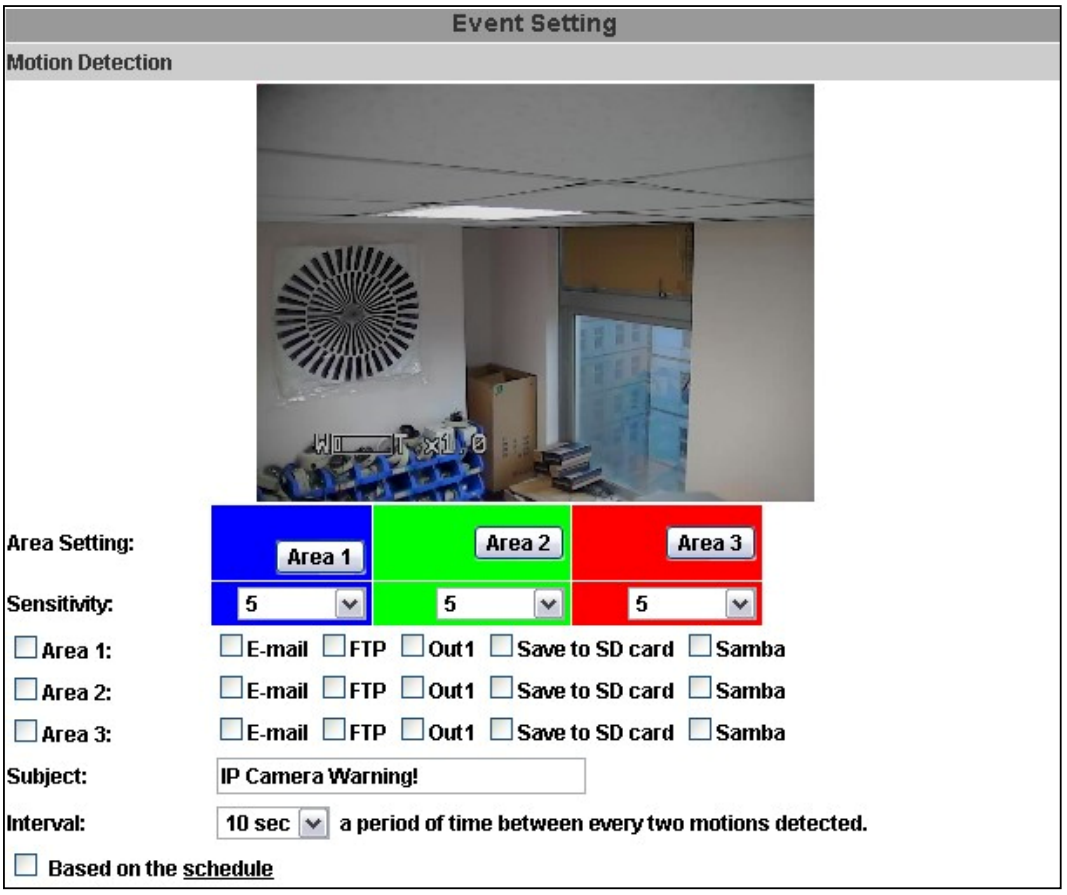
If "Chatting" and "Save to SD card" are enabled simultaneously, the sound quality might be affected and becomes not smooth.

D. Event List

IP Camera provides multiple event settings.

1. Event Setting

   a. Motion Detection



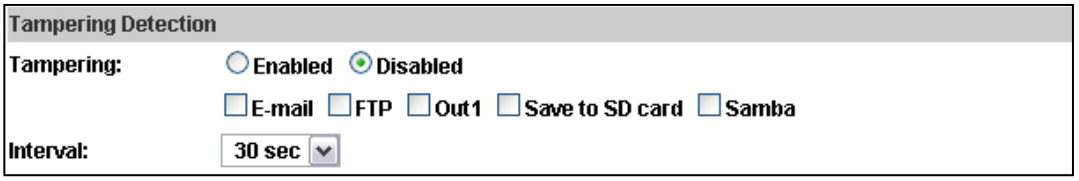
To enable motion detection, tick **Area 1/2/3**. Click **Area 1/2/3** in **Area Setting**, and draw an area on the preview screen. When motion is detected in the area, the word **Motion!** will be displayed on the live screen. The camera will send video or snapshot to specific mail addresses, trigger the output device, or save video to FTP/ Micro SD card/ Samba.

By selecting **save to SD card**, the video or snapshot will be saved to the Micro SD card. Also, by ticking **E-mail/ FTP/ Samba** on the **Log** option, the motion detection log will be sent to **E-mail/ FTP/ Samba** simultaneously.

• Interval: For example, when selecting "10 sec", once the motion is detected and the action is triggered, it cannot be triggered again within 10 seconds.

• Based on the schedule: When the option box is ticked, only during the selected schedule time the motion detection is enabled.

b. Tampering Detection



When the camera view is covered, moved, hit by strong light, or out of focus, the tampering detection will be triggered, and send snapshot or video to mail/FTP/Samba/SD card, or trigger the external alarm. For example:

Before Tampering Detection

Tampering Triggered (Defocused)

Before Tampering Detection

Tampering Triggered (Lens Covered)

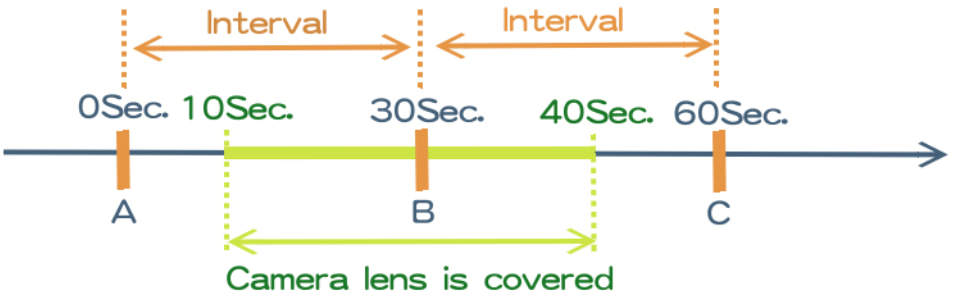
Before Tampering Detection

Tampering Triggered (Glare)

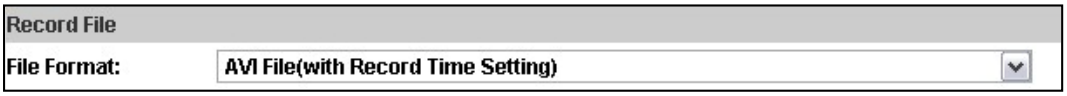
Before Tampering Detection

Tampering Triggered (Camera Moved)

• Interval: The tampering detecting interval. Take the diagram below as example. The interval is set for 30 second; the camera lens is covered during 10 - 40 sec. At time point B, the camera compares the view with time point A, and sends an alarm when it founds that the lens is covered. At time point C, the camera compares the view with time point B, and sends an alarm when it founds that the lens is uncovered.



c. Record File



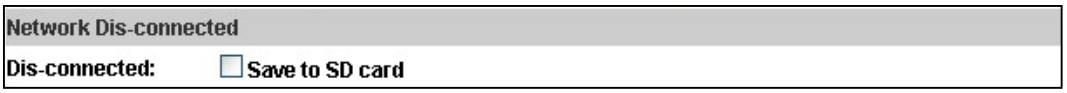
Choose one of the format, AVI or JPEG .

d. Record Time Setting

Set up the video recording time for Pre Alarm and Post Alarm when motion is detected, I/O, or other devices is triggered.

Note: Pre/Post Alarm record time is base on record time setting and restricted to IP Cam built-in Ram memory. If the quantity of data is too huge or video quality too high, recording frame might drop or decrease on post alarm recording time.

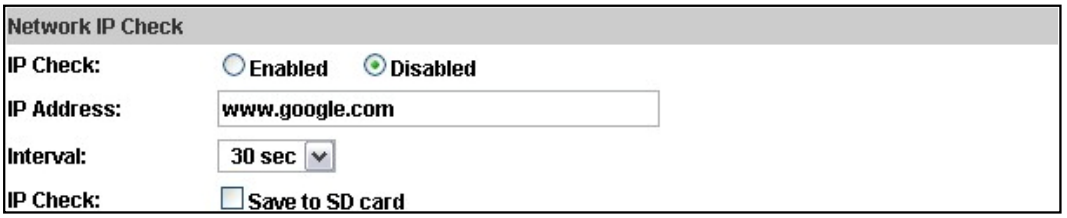
e. Network Dis-connected



To avoid video loss, the camera will start to save the video to local SD card when it detect no network connection. The video recording will continuously be saved into SD card and divided into every 10 minutes a file until the network is reconnected successfully. The oldest file will be deleted if the capacity of SD card is full.

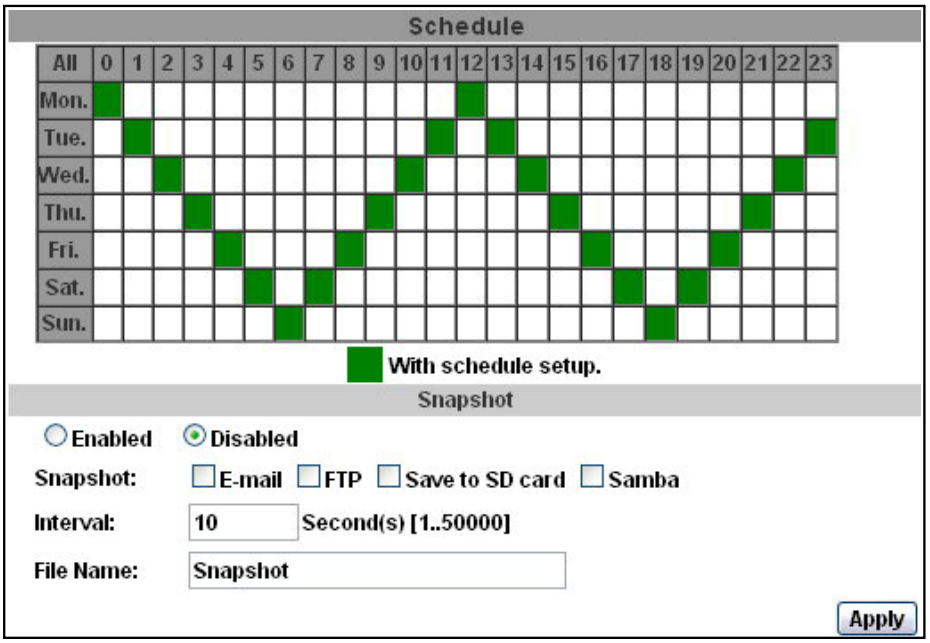
This function is only enabled under wire connection.

f. Network IP check:



Key in the target IP address and interval. The camera checks once in a while according to the setting interval time that if it can link to the target IP address. If connection failed, the camera starts to save the video to SD card.

2. Schedule

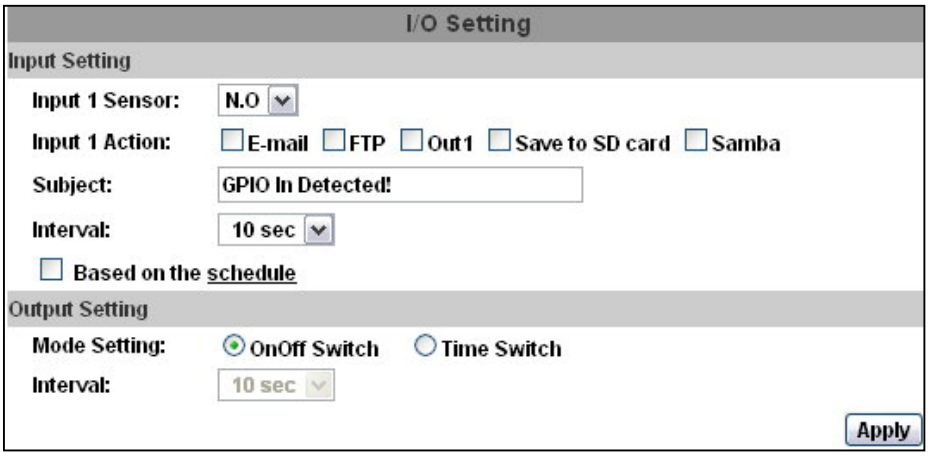


a. Schedule: After complete the schedule setup, the camera data will be recorded according to the schedule setup.

b. Snapshot: After enable the snapshot function; user can select the storage position of snapshot file, the interval time of snapshot and the reserved file name of snapshot.

c. Interval: The interval between two snapshots.

3. I/O Setting



a. Input Setting:

IP Camera supports input and output. When the input condition is triggered, it can trigger the relay; send the video to mail addresses /FTP server / SAMBA.

- Intervel:

  For example, if you select "10 sec" here, once the motion is detected and action is triggered, it cannot be triggered again within 10 seconds.

- Based on the schedule:

  When the option box is ticked, only during the selected schedule time the I/O is enabled. That is, for example, the 11th hour of Monday has not been colored in the schedule table, then no action will be triggered even the camera detects input signal during 11:00~12:00 on Monday.

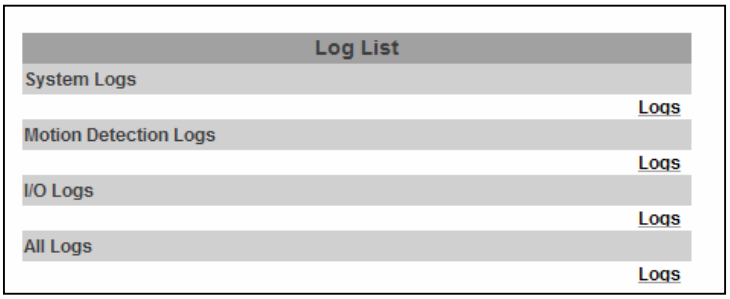
b. Output Setting:

The output mode affects the DO or relay out duration.

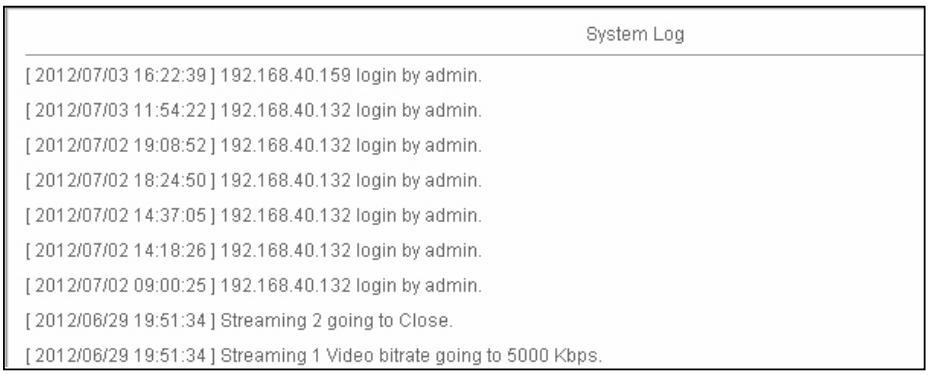
(I) OnOff Switch: The camera triggers the external devise and lasts for 10 seconds. You can turn off the alarm manually by click "off" at the right bottom of the live video page.

(ii) Time Switch: The camera triggers the external devise and lasts for certain of time according to the interval setting, and the user is not allowed to break off the alarm manually.

4. Log List



Sort by System Logs, Motion Detection Logs and I/O Logs. In addition, System Logs and I/O Logs won't lose data due to power failure.

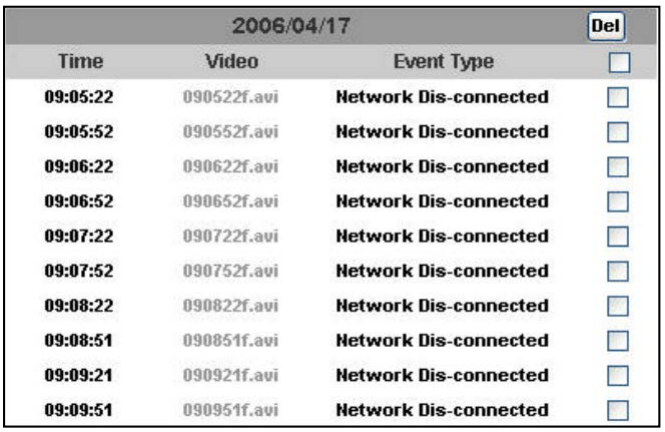


5. SD card

a. Playback

Please Insert SD card before use it. Make sure pushing SD card into the slot completely.

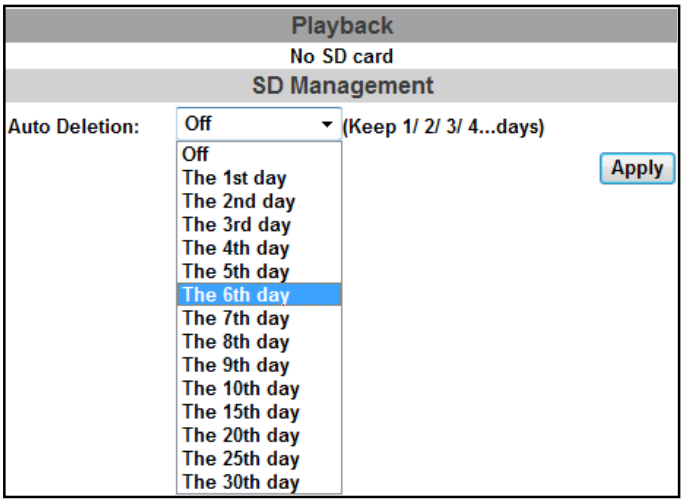
Click the date listed on this page, and it shows the list of the video. The video format is AVI. Click the video to start Microsoft Media Player to play it. To delete the video, check it, then click "Del".



b. SD Management

Choose “The 1st day” means the recoding file will be keep one day. Example: It is five o’clock now. Choose “The 1st day”. The files will be kept from five o’clock yesterday to five o’clock today.

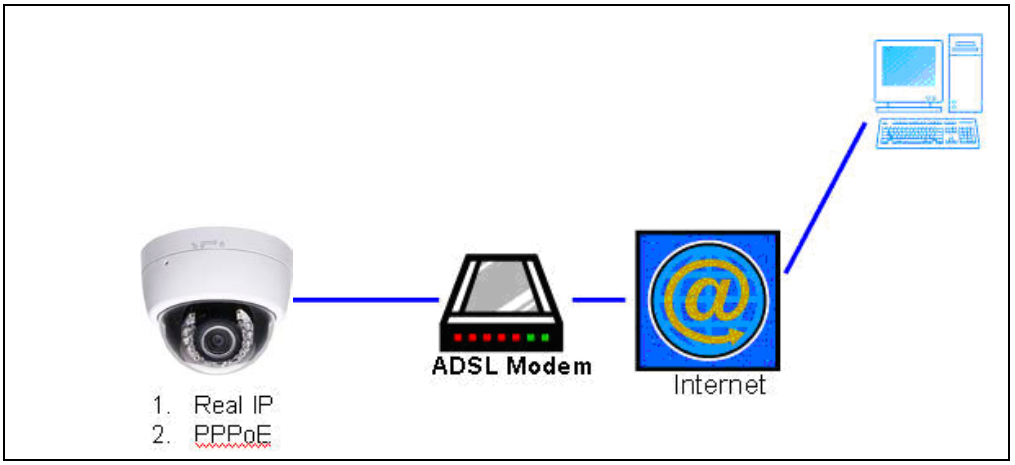
The oldest file will be deleted if the SD card is full.



Note：The use of the SD card will affect the operation of the IP Camera slightly, such as affecting the frame rate of the video.

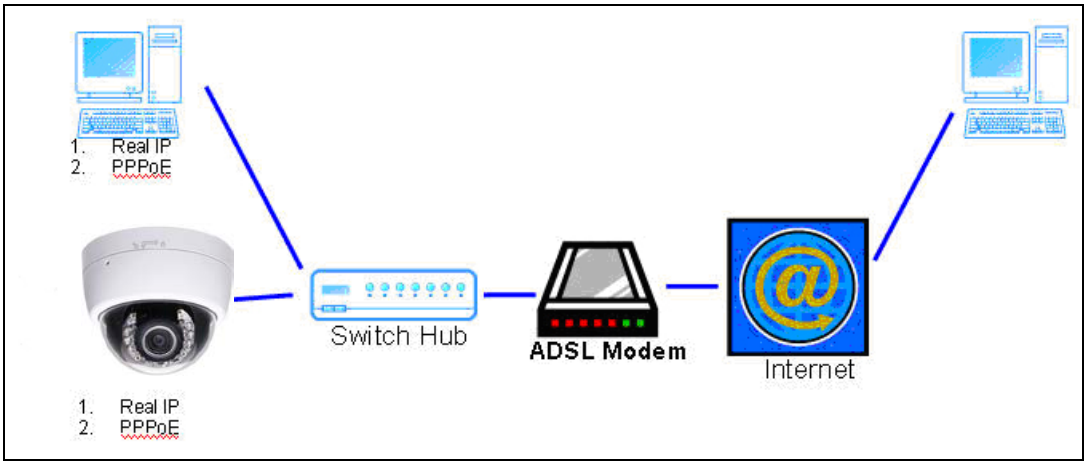
VI. Network Configuration

- Configuration 1:



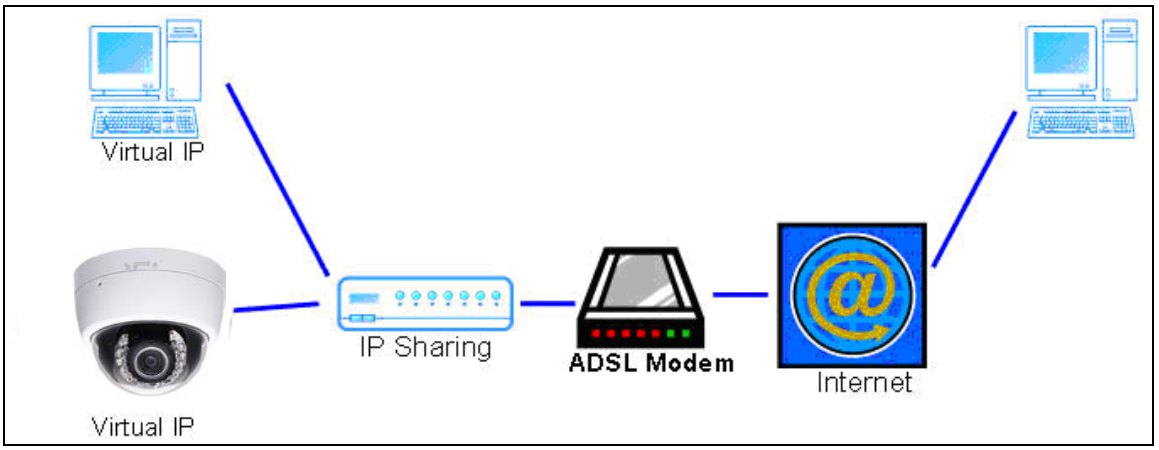
a. Internet Access: ADSL or Cable Modem
b. IP address: One real IP or one dynamic IP
c. Only IP Camera connects to the internet
d. For fixed real IP, set up the IP into IP Camera. For dynamic IP, start PPPoE.

- Configuration 2:



a. Internet AccessL: ADSL or Cable Modem
b. IP address: More than one real IP or one dynamic IP
c. IP Camera and PC connect to the internet
d. Device needed: Switch Hub
e. For fixed real IP, set up the IP into IP Camera and PC. For dynamic IP, start PPPoE.

- Configuration 3:

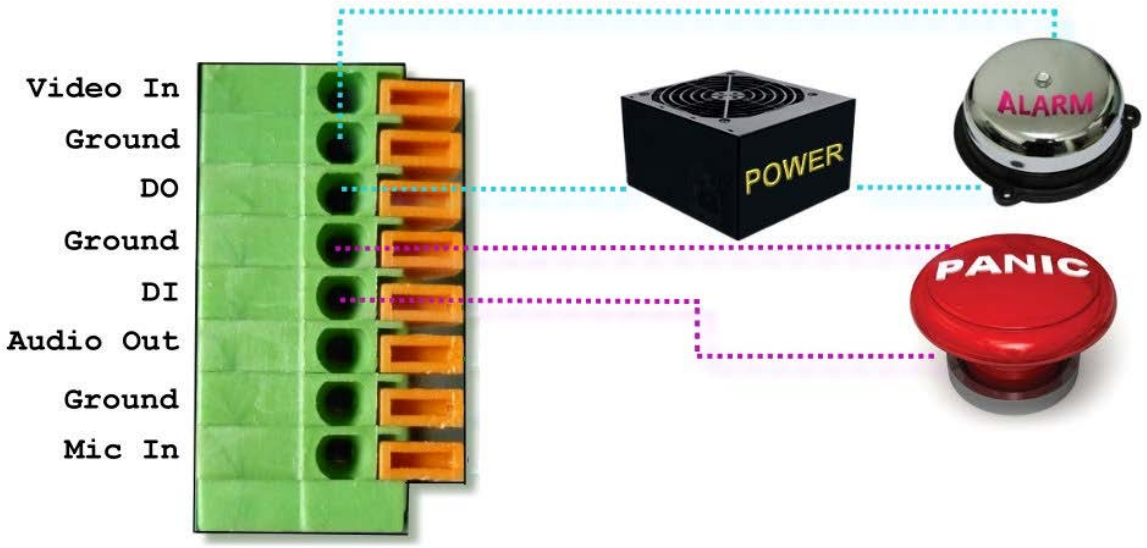


a. Internet Access: ADSL or Cable Modem
b. IP address: one real IP or one dynamic IP
c. IP Camera and PC connect to the internet
d. Device needed: IP sharing
e. Use virtual IP, set up port forwarding in IP sharing.

VII. I/O Configuration

1. I/O Connection

a. Please connect the GND & DO pin to the external relay (buzzer) device. Please connect the GND & DI pin to the external trigger device.

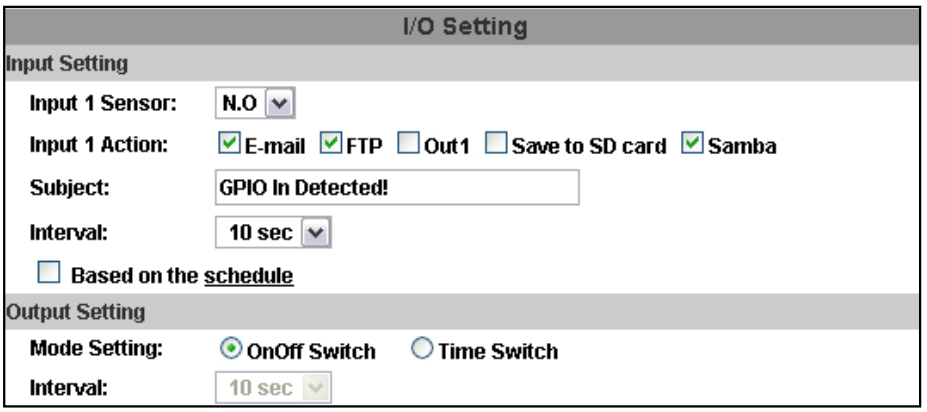


b. I/O PIN definition

- GND (Ground): Initial state is LOW
- DO (Digital Output): DC 5V
- DI (Digital Input): Max. 50mA, DC 5V

2. I/O Setup

a. Click I/O Setting from the system setup page via IE, and check “Out1” to enable I/O signal.


I/O Setting
Input Setting
Input 1 Sensor: N.O
Input 1 Action: E-mail FTP Out1 Save to SD card Samba
Subject: GPIO In Detected!
Interval: 10 sec
Based on the schedule
Output Setting
Mode Setting: OnOff Switch Time Switch
Interval: 10 sec

b. Output Test

After the external input and output hardware is installed, you can use the

"Relay Out" bottom on the live video page to test if DO / Relay Out works.

(i) OnOff Switch mode:

Click "ON", the camera will trigger the external output devise for 10 seconds. For example, your alarm buzzer will continuously ring for 10 seconds. After 10 seconds the buzzer stops ringing, or you can manually break off the output signal by clicking "OFF".

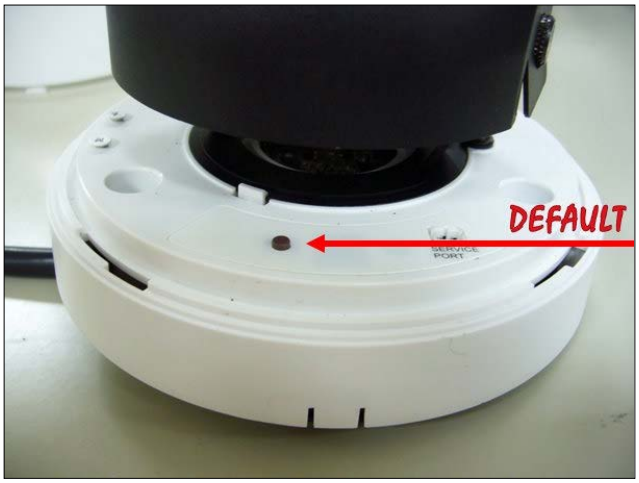
(ii) Time Switch mode:

Click "Pulse", the camera will trigger the external output devise for several seconds, The duration length is according to the "interval" setting in Output Setting.

VIII. Factory Default

If you forget your password, please follow the steps to revert back to default value.

- Remove the power and ethernet cable. Open the dome cover, and press and hold the button as the picture below.



- Connect power to the camera again, and do not release the button during the system booting.
- It will take around 30 seconds to boot the camera.
- Release the button when camera finishes proceed.
- Plug in the ethernet cable. Re-login the camera using the default IP (http://192.168.1.200), and user name (admin), password (admin).

IX. SD Card Compatibility

The following is the compatible SD Card, and those in red are especially recommended:

SD CARD	
ADATA 4G	SanDisk 512M
ADATA 512M	SanDisk 8G
Blast 128M	SiliconPower 128M
GiGATEK 128M	SiliconPower 256M
Kingmax 256M	TEKQ 128M
Kingston 128M	TEKQ 256M
Kingston 1G	Toshiba 128M
Kingston 256M	Toshiba 256M
Kingston 32G	Toshiba 4GB
Kingston 512M	Tracend 128M 80X
Phast 256M	Tracend 1G 80X
Photofast 256M	Tracend 256M 80X
PK 128M	Tracend 2G 150X
PRETEC 128M	Tracend 4G 150X
READY 128M	Tracend 512M 80X
SanDisk 128M	Transcend 16G
SanDisk 16G	Transcend 32G
SanDisk 1G	Transcend 4GB
SanDisk 256M	Transcend 8G
SanDisk 2G	TwinMOS 128M
SanDisk 32G	TwinMOS 256M
SanDisk 4GB	UMAX 128M
	U-TEK 128M
SDHC CARD	
SanDisk 4GB	Transcend 4GB
SanDisk 8G	Transcend 8G
SanDisk 16G	Transcend 16G
SanDisk 32G	Transcend 32G
Toshiba 4GB	Kingston 32G